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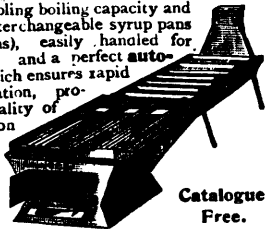
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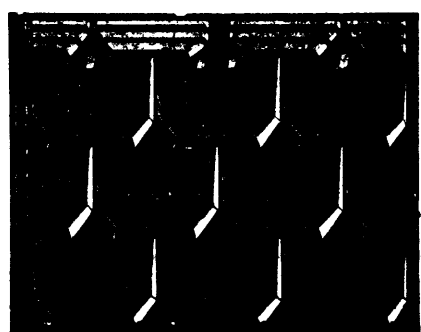
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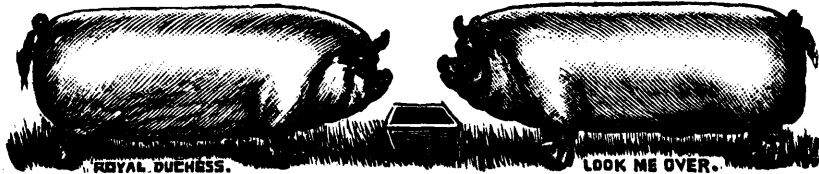
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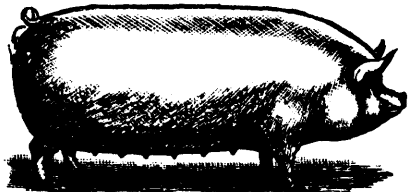
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FARMING

VOL. XVII.

NOVEMBER 14th, 1899

No. 11

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Farm Implement News

We wish again to impress upon our readers the importance of the announcement made in last week's issue in regard to the starting of a Farm Machinery Department in FARMING. This new department will appear in next week's issue for the first time, and the third issue of each month thereafter. Though we are starting out on this new line in a modest way we hope to make it exceedingly valuable and beneficial to our readers. It is a new departure in the agricultural newspaper line in Canada, and we desire the active co-operation of farmers and manufacturers alike in making it a success. In the first number will appear several practical articles with illustrations showing the working of some of the newer machinery that is coming into use on the farm. We believe every farmer who has to buy one or more machines every season or farm utensils of any kind will appreciate our efforts along the lines we have indicated. Of late years the farm machinery department has become one of the most important in connection with the farmer's calling. With the improvement and advancement that is constantly being made in farm machinery of all kinds, this branch tends to become of vastly greater importance to the farmer than is the case at the present time. For this reason we believe this new department will in a short while become one of the most important features of our paper.

British Apple Market Demoralized

Last week was a bad one for the export apple trade, and the bottom seems to have gone out of that market. Mr. R. H. Ashton, representing the Manchester Fruit Brokers, Ltd., received per cable of Nov. 9th the following report of the Manchester apple market:

"Fruit mixed in size and quality. Baldwins, 10s.; Greenings, 9s. 8d.; Spys, 9s., and Kings 14s. per barrel average." This report, as compared with that mentioned in last week's market review, shows a decline of from 4s. to 7s. 6d. per barrel. The week previous Spys were quoted at 16s. 6d., as compared with 9s. last week. Everyone knows what a shrinkage like this means to apple shippers, and what effect it will have upon the market here. But the Manchester market is not the only one demoralized. The Liverpool market is reported to be in even a worse condition. From another source we learn that the following cable has been received regarding that market: "Rotten condition. Nothing sound. Quotations impossible."

As far as we can learn, this demoralized condition of the British apple market is not so much due to an over-supply

as to the bad condition of the fruit when it arrives. One of the cables mentioned above speaks of the fruit as being mixed in size and quality. Now, such a condition is entirely due to the packing, and no one is to blame but the person who packed and picked the fruit. The other cable refers to the "rotten" and unsound condition of the fruit. This may be largely due to the packing and long ocean voyage; but, in addition to this, there appears to be something wrong with the fruit itself in that it has not the keeping quality of other years. This is something that our experiment stations and scientific fruit men should look into. We have heard it reported that a great many of the apples this year have too much water in their composition, and, therefore, are harder to keep. Whatever is the cause there is something radically wrong in the trade somewhere. What with poor quality, mixed varieties, long ocean voyages, and bad packing, the apple shipper has a hard time of it.

The Manchester firm referred to, in a letter to their representative here of date Oct. 28th, has the following to say in regard to the quality of the fruit arriving at that port and the prospects for better prices:

"Some of the parcels received by the last steamers had been on the way three weeks or more, and the condition had, in consequence, suffered. This tends to confirm what we said last week about the want of keeping quality in this year's apples, and we repeat that shippers will do well not to hold their stocks back but to ship now. We repeat that we do not see any likelihood of higher prices than those now ruling being obtainable between now and Christmas."

While the general condition of the apple market is a bad one, really fine, sound apples command fair prices in the English markets, and should net here \$2.50 per bbl. Yet the general run of the fruit that has arrived lately will not net \$1.50 per barrel. As far as we can learn from enquiries made here, there is not any likelihood of very much improvement in the market till near Christmas.

Prepare for Winter

To many such admonition as the above will be considered unnecessary. Nevertheless, though there are many farmers who always have everything in ship-shape for winter, or for any other season, before it arrives, there are numbers who put everything off till the last moment, and when the snows come are totally unprepared for them. To such, a little timely warning may do good. As much can be done now when the weather is fine in preparing for winter as during a whole week after the cold, stormy weather sets in.

We will begin at the house. All the windows, both cellar and otherwise, and doors, should be carefully examined and if any glass needs replacing or requires more putty it should be attended to. Many a draught will be kept out of the rooms later on if all the window casing is gone over and the windows tightened. This task will not take up much time, and will make the winter days and evenings more comfortable for the family. In addition, all the stables and outbuildings where the live stock are housed should be gone over in the same way. If this is done a great deal will be saved in the way of feed, and animals will thrive better if their quarters are comfortable.

Then there is the housing of the roots, fodder crop, etc. But this is one of the essential things, and there are very few who neglect this part of the winter's preparation. We have known, however, of cases where farmers have been caught by the snow with their turnips in the ground frozen as hard as bullets. The chief fodders crop to be looked after is corn. Many farmers now have silos and long ere this their corn crop is ready for winter's feeding. But there are many who grow corn who have no silo, and to these the saving of the stalks for winter feeding is a serious problem. Unlike most other fodders it will not do to put corn stalks when dry in any large bulk as they will be sure to spoil. Some have followed the plan of putting the stalks in the mow of a barn, mixing a liberal proportion of dry straw with them. While the corn may be preserved in this way if not in too great bulk, it is not as satisfactory as some other plan.

The best plan we know of for preserving cornstalks whether the ears are on or not is to set them upright on either side of a long pole set on posts about 4 or 5 feet from the ground. This can be done without any difficulty. Set the pole as indicated and then place the stalks on both sides of it, leaning towards the pole. If the stalks are dry three or four feet deep of stalks can be so placed on each side. When the pole is filled it is a good plan to start at one end with some binder twine and with a man on each side, sew the tops together above the pole. This can be done by attaching to the ends of the twine pieces of broom handle about 2 feet long. These can be shoved back and forward through the stalks and then by pulling the twine attached tightly the tops will be brought closely together, and will form a complete water shed. These poles can be put up conveniently to the stable, and if a lot of straw or chaff is strewn on the ground where the corn is to stand there will be no difficulty in freeing the stalks from the frozen ground when feeding.

Then the storing of the apples, potatoes, roots, etc., is important. Some information in regard to this is given in another column. As we pointed out a week or two ago the farm machinery should be overhauled and placed in a good dry place for the winter. It is a good plan to go over the castings and metallic parts, where not painted, with an oiled cloth. This will prevent rust and the machinery will come out in better shape in the spring. We forgot to mention the cleaning of the house chimneys, etc., but we presume the women of the household will see that this is attended to. Fires will burn better and the stoves, furnaces, etc., will give better satisfaction if properly cleaned and fixed up for winter. Besides, there will be less risk of a fire burning the buildings if this is done. We have only mentioned a few of the little things that need attending to on the farm before winter sets in, but enough we think to indicate on what lines preparation should be made for winter.

Keeping Apples and Vegetables

In keeping apples during the winter a comparatively low temperature should be maintained. The average cellar is rather warmer than it should be for this purpose. A temperature of about 32 degrees is a good one in which to keep apples. From now till the really cold weather sets in is the hardest time to keep them. Where they are kept in a cellar during this period the windows should be kept open and a lot of fresh air allowed through. The best way to keep apples is to barrel them, being careful only to put in sound specimens. The barrels should be set on strips to allow the air to pass under them and far enough from the wall to allow room to pass behind them. The barrels should be left entirely undisturbed until they are to be used, when the barrel should be opened and the apples taken out as wanted without moving the barrel. If care has been used in handling and picking, and the fruit is kept as cool as possible, there should not be much difficulty in keeping apples fresh till spring.

The chief vegetable to be stored is the potato. While potatoes will not stand as low a temperature as apples, yet it will not do to keep them in too warm a place. Then, they should be stored so as to allow a circulation of air around them. About as good an arrangement as we ever saw for storing potatoes in a cellar was a number of bins holding 40 or 50 bushels each, placed around the wall, but not close to it. These bins were raised five or six inches from the ground, and the front, instead of being tightly boarded, was built of strips nailed close enough together to prevent the potatoes from going through, thus allowing a free circulation of air through and around the bin. With some arrangement of this kind so fixed as to allow a circulation of air there should be no difficulty in keeping potatoes provided they are dry and sound when put in the cellar.

Among the other vegetables grown on the farm the cabbage is about as hard a one as any to keep fresh during the winter. Cabbage is not injured by being frozen, provided it is not allowed to thaw out and freeze again. A common way of keeping cabbage is to bury it by turning the heads upside down and banking soil about them. But this is not considered the best. An American garden exchange gives the following plan which, though involving some labor, should prove successful:

"The best way to keep cabbage through the winter is to pull it on a dry day, and let it lie until the leaves wilt enough to become somewhat soft and pliable. Then dig a ditch a foot wide and just deep enough so when the cabbages are set in with the roots down the bottom of the heads will be even with the surface. This ditch should be in a place where water will not run into it. After this is done, proceed to set the cabbages in the ditch, packing them in as closely as possible, and as they are put in fill between the stems with the soil thrown out of the ditch. The soft heads as well as the good ones should be put in and the outer leaves arranged around the heads smoothly and closely. After all are transplanted into the ditch, cover the heads carefully with straw and over this put soil a foot deep, making the ridge firm by patting with a shovel. On the top of the ridge lay a strip of sods to keep the soil from washing and the water from entering at the top, and the plants are safe for the winter. The heads that were soft and worthless when put into the pit will fill out and become crisp and tender, blanching perfectly and becoming as good as the hardest heads by the middle of the winter."

Poultry Fattening Stations

Last year the Department of Agriculture at Ottawa decided to establish two experimental poultry fattening stations to show what could be done in the way of fattening poultry for the British market. The results were so satisfactory that it was decided to largely extend the work this fall. There are now in operation eleven of these stations scattered through the various provinces of the Dominion. About 3,000 birds are being fattened, and already over 800 birds have been killed and forwarded to the British market. These were fed for one month, having gained in that time an average of two and a half pounds each. The work this year on a more extended scale will serve to show more conclusively what can be done in developing an export trade in dressed poultry.

As we have already stated, the results so far have been very satisfactory, and show that, as far as the market end of the business is concerned, no great difficulty presents itself. What is required now is for our farmers to produce the kind and quality of poultry suited to this trade. While any kind of fowl will be greatly improved by proper care and feeding, yet there are varieties better adapted for fattening purposes than others. These the farmer should raise and feed for the British market. The breeds of chickens preferred in England for fattening purposes are the Dorking, the Dorking and Indian game cross and grade Plymouth Rocks and Wyandottes. The Dorking is noted for its fine

quality of meat, but does not appear to be hardy enough for our conditions. The Plymouth Rocks and Wyandottes do well with us. There are other breeds, no doubt, if properly cared for and fitted, would also be suitable for the English market.

The selecting, feeding, and breeding of the right kind of fowl for both egg production and fattening purposes is of the greatest importance, and we hope to be able during the next few weeks to supply a lot of valuable information along this line. If a farmer keeps poultry he should aim to keep the kinds that are in demand and will return him the most profit. It costs as much to keep a hen that is no use as to keep one that will return a good profit on her keep.

Since writing the above the following report has been received by Prof. Robertson from Liverpool on the arrival of the first lot of fattened chickens received there for this season. The consignee says: "The chickens arrived in splendid condition. The chickens met with a ready sale. Regular shipments have been forwarded every week since the first week of October."

Germany's Beet Sugar Output

Last week we gave some information as to the efforts that are being made to develop the beet-root sugar industry in Canada. Germany is the largest producer of beet root sugar in the world and it may be interesting to those concerned to know the extent of the annual output in that country. One of the American consuls in Germany has sent to the Department at Washington, some valuable data based upon the operations of 402 factories in that empire. The yield of the season shows no increased area, which has been, since 1896, a little over 2,000,000 acres, yielding 12,144,290 metric tons of 2,204 6 lbs. These gave a sugar product of 1,623,025 tons of raw sugar, an average of 1,705 tons to the acre, a higher average than last year. The beet yield per acre only reached 11½ tons, but the quality is said to have been superior. The farmer received \$4 per ton and the manufacturer \$49.50 for his raw sugar, but the profits to the owners of and stockholders in these factories could not be ascertained by the consul, as no reports were obtainable.

The lowest yield per acre reported was 7.59 tons; the highest, 13.05. The conclusions reached are that the German beet sugar industry has come to a standstill, and that no large increase in production in the near future need be feared by outside nations. The data given for next season show only .35 per cent. of increase. The highest price reached for raw sugar was 2.43c. per pound.

Another Turnip Pest

By Wm. Lockhead, Prof. of Biology, Ontario Agricultural College.

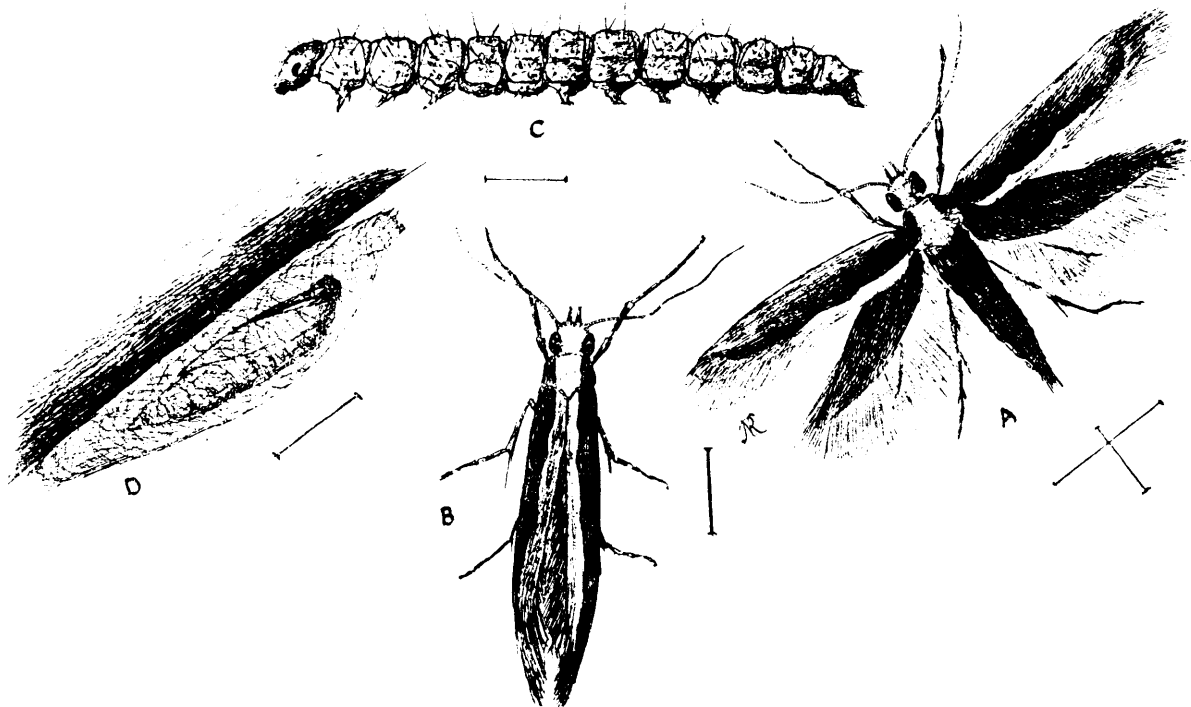
In several sections of the province the turnip crop has suffered from the attack of small green caterpillars, which vary in length from one-sixteenth to half an inch. Their mode of attack differs somewhat from that of the common cabbage-worm, which was also quite destructive to the turnips this season. The latter strip the leaves down to the very veins by constant gnawing along the edge of the leaf, but these small caterpillars eat holes in the leaves. Often the holes become so numerous the leaves are in tatters.

This new pest is known as the larva of the Diamond-back Moth, which is well-known in England, where it has been for many years a great pest. Its scientific name is *Plutilla Cruciferarum*.

The caterpillar is beset with short jet-black hairs, which are arranged with much regularity. Each segment of its body has apparently two rows of about six hairs each, almost encircling the body, while at the base of each hair is a whitish circular area, which is quite conspicuous on the greenish colored body.

The caterpillars on reaching their full size spin thin gauzy cocoons on the under side of the leaves, generally close to a large vein, which acts as a protection. Through the cocoons, which are open at both ends, the chrysalis can be plainly seen. The chrysalids vary greatly as to their markings, but there are always two prominent black tips on the under surface—the one near the middle of the body being the tip of the sheath of the legs, and the other being the sheath of the tongue and feelers.

From the cocoon emerges a small moth, with delicately-fringed wings, resembling the ordinary clothes moth, except



PLUTILLA CRUCIFERARUM (Diamond-back Moth)

A. Moth, showing delicately fringed wings and white line on front wings. B. Moth with wings folded, showing the diamond-shaped area on the back. C. A green caterpillar, showing the lines of jet-black hairs on the back and sides. D. A cocoon, gauzy in texture, with the chrysalis showing through. The cocoon is open at both sides. (The hair lines beside each represents the true length.)

that the markings on the wings of the former are very conspicuous. The English name Diamond-back Moth is derived from the peculiarity that when the wings are folded and laid flat along the back the pale line of markings on the inner margin of each of the front wings form a diamond-shaped area.

As I have already remarked, this moth has been known for some time in Great Britain. In 1851 it appeared in sufficiently large numbers to eat up the whole turnip crop. Oddly enough the chief damage done by this moth in Eastern Ontario and United States heretofore has been on cabbage, while in Western Canada, all kinds of cruciferous plants suffered. Dr. Fletcher reported an outbreak at the Central Experimental Farm, Ottawa, in 1889, and from his observations made then he was led to believe that there are probably three broods each year, that the last brood passes the winter in the pupa or chrysalis state. The same observer found moths in July, August and September. At Guelph, however, the moths have been observed as late as the first week in November.

American entomologists have also frequently referred to this insect in their publications, but their accounts relate chiefly to the damage done to cabbages.

As to remedial treatment very little can be done at this season of the year on account of the mature condition of the turnips, but should the caterpillars of the first or second broods make their appearance in any considerable number on the young turnip leaves an application of "Paris green mixed with either flour or land plaster" dusted dry upon the leaves would be found of great value. Miss Ormerod, of England, recommends the swishing off of the caterpillars by a stick, followed by a liberal supply of gas-lime or soot spread broadcast by hand. Dr. Fletcher advises the use of kerosene emulsion diluted with nine or ten parts of water, when cabbages are affected.

Fortunately for us these caterpillars appeared in destructive numbers this year in late autumn when the turnips had virtually attained their full growth. Sometimes, however, as in England in 1851, the pest was most destructive in July when the turnips were very small. Observers tell us, moreover, that the pest may be very troublesome one year, and difficult to find the next. In Canada it was very abundant at Victoria, B.C., and Winnipeg, in 1885, but has not been reported as serious since. It was quite serious at Regina in 1887, and at the Ottawa Experimental Farm in 1889, but not reported as serious from those districts since. The farmer and gardener should be on the lookout for this very serious pest early in the summer, for if not attended to promptly, it is very apt to sweep the whole crop away. The farmers have very strong allies against this diamond-back moth in the form of very small four-winged flies which destroy a large percentage of the caterpillars. No doubt it is due to the work of this parasitic ally that the pest does not reappear the succeeding year.

Feeding Export Cattle

Some Practical Pointers for Farmers

By G. W. Green

"I have not seen a decent bullock from Montreal this season." The above startling statement of an English cattle buyer, quoted in the October 17th issue of FARMING, brings home to us in a most striking manner the deplorable and far-reaching results brought about by the lack of care and attention, as regards breeding for beef, that prevailed so generally among the farming community in this Dominion for a considerable period previous to the recent improvement in trade. The statement itself is certainly exaggerated, but it is at least half true, as can easily be verified by any one who takes the trouble to visit any of the stock yards in our big cities where "exporters" are brought for sale.

The causes that have led to this deterioration in our beef cattle are well known. First and foremost was the dis-

couraging price of beef for a lengthy period, which caused numbers of farmers to give up breeding and feeding beef cattle entirely, while others became careless and bred their cattle to poor and indifferent sires, hoping foolishly to save money in service fees, while they shut their eyes to the fact that the produce must necessarily be so inferior as to be a drug on a market that was at that time none too satisfactory even for the best. Then, again, the attractive prices obtained for dairy produce caused many farmers, who had formerly handled beef cattle, to try their luck at dairying, and, finding the results satisfactory, they decided to remain dairymen.

Such are the two principal causes that have not only lessened the stock of beef cattle in this country, but have brought deterioration in them as well. Now, however, the pendulum has swung to the other side, beef is fetching good prices, and once again breeders are replenishing their stocks and buying the best they can buy. There will soon be a great improvement visible in our beef cattle, and the reproach against our foundation stock will be removed.

PROPER FEEDING OF EXPORT CATTLE.

While the raising of good stock is vital to our success in the export cattle trade, there is another very important feature that does not always receive that attention that it should, that is, the proper feeding of such cattle, when we have procured them. The rations given must be such as to produce a firm flesh that will not shrink much in shipment. A soft, flabby flesh can only result in loss to the shipper, and, on that account, he is ready to pay a little more when he knows that the animals have been fed so as to stand the long journey to the Old Country satisfactorily, and not to shrink more than is usual.

CATTLE THAT IT WILL PAY TO FEED.

And, first, a few suggestions about the class of cattle to be selected, will be in order. The breeder, who raises his own calves, will, as a rule, select his best animals for feeding for export, but a very large number are dependent on others for their supply of stockers. Of course, all feeders, who have been in the business long enough recognize the necessity of getting hold of the best animals they can, but some, especially beginners at the business, have yet much to learn in that direction. Aim to buy thick, low set, thrifty animals, with their upper and lower lines as nearly parallel as possible, taking care that they are good handlers, that is to say, that they have a nice soft skin, with a fine but thick coat of mossy hair. A harsh skin indicates slow circulation and poor digestive powers. As regards weight, from 1,000 to 1,100 lbs. is a good average, and the younger they are at those weights the better. A good, placid eye in a beast is a proof of contentment and ability to do well. An animal with coarse bones should be rejected. The demand at present is for quality and finish. All these points should be considered, because their presence or absence may make all the difference in making a profit or scoring a loss when the animal comes to be sold, and in these days, when we have the close competition of other countries to meet in the British markets, one or more deficiencies in an animal may serve to reduce the seller's profits, or even extinguish them altogether. Another important point is to select animals as nearly of a kind as possible. Buyers will pay a little more when they can purchase a good, even bunch of fat cattle in one stable, because they are saved trouble afterwards in sorting and selecting for shipment.

STALL-FEEDING.

There are two methods of feeding now practised in this country, stall-feeding and feeding dehorned animals loose in sheds. Of these the first is that most generally practised, having been in vogue for years. The other system, however, is being used by some large feeders, who speak very highly of it and who claim that their profits are larger in this way and that the animals do better.

In stall-feeding the animals should be put into the stable towards the end of November, or a little earlier if the weathe

is cold and rough. Many now dehorn their stockers before stabling them, and find that they feed better. For the first few days feed grain lightly, unless they have been getting some before being finally tied up for the winter. As regards the rations to be fed, it is impossible to give a single ration that will not only be the best, but that will bring the highest returns and be the most economical for every feeder to use. So much depends on the locality, the crops in the barn, the possibility of being able to sell certain grains and buy others that are cheaper. Then, again, animals' digestive powers vary so that the feeder will have to carefully watch, and, if an animal is not doing its best on one kind of food, he must try something else, and thus cater to its appetite. All that can be done here is to enumerate rations that have been found suitable by certain big feeders, which will give others a pretty good idea of what amounts and combinations of feed are generally used. By studying these, and making alterations here and there, so as to avail themselves of certain food products, which they may have on hand, and which, perhaps, can profitably be brought into the rations, feeders can easily derive a satisfactory one for themselves. Experience only, however, will prove whether such a ration will be profitable. Some years it might be, and, in others, not.

In the first place, most feeders find it profitable to cut up their long feed and crush their grain. Isolated cases may be found where, through lack of the necessary machines, or of help, or by reason of too great a distance from the chopping mill, the feeder has not found it profitable to cut his hay, straw, or cornstalks, or have his grain chopped, but these cases are rare.

ENSILAGE FOR FATTENING.

Ensilage has hitherto been generally considered as suitable only for dairy farming, and it has not been much used in feeding for beef. It is, however, used by some feeders, more especially during the earlier part of the fattening period, with excellent results. It is cooling to the system, while corn ensilage that contains much grain goes far in supplying a large part of the food materials required, when beef cattle are first stabled. It is true that the carcasses of animals fed ensilage are more or less watery, like those of animals fed on grass, but it is easy later on by giving more dry food and by increasing the grain to bring the flesh up to a firm and dry condition. In experiments at the Guelph station steers getting silage and grain made better gains than those fed on roots, hay and grain.

MIXING THE RATIONS.

Where the hay, straw or cornstalks are cut, it is very advantageous to mix them with the grain and cut root at least half day ahead and let the mass heat a little before it is fed, or else dampen it, which answers nearly as well. The animals seem to relish it more than when it is fed dry, and, as quick gains in live weight are necessary in feeding cattle, in order to secure as much profit as possible, anything that tends to encourage the appetites of the animals should be employed, providing that the labor is not too great. For the same reason mixtures of grain are far better than feeding one single variety all the time. While, moreover, good gains may be made from feeding one kind alone, much better results, as regards both economy and gains in live weight, are obtained from the use of mixtures. For instance, while one pound of increase in live weight can be obtained from feeding eight pounds of bean or of pea meal, or five pounds of linseed meal, the same result has been produced from four and a-half pounds of linseed meal and peas, or from three and a-half pounds of linseed cake and beans in equal proportions. The saving here is manifest.

RATIONS.

As stated above, no cast-iron ration can be laid down for each feeder. He must utilize his feeding stuff as best he can. Hay, straw, corn stalks, ensilage, roots, and the various coarse grains can all be used. We have not, unfortunately, in this country, a bounteous supply of cheap corn

such as the feeders in the Western States have, and which they use to such good advantage, for, in our opinion, that in the sole cause of the higher prices realized by American cattle in competition with ours in the old country markets. Many of these American cattle came from this country, being sold in Buffalo as stockers and shipped to the corn districts to be fed. The freight, etc., prevent our feeders importing the western corn largely and so they have to utilize what coarse grains they have to hand.

There are some rations that have been used with good effects: Cut corn stalks and straw dampened, with three pounds of meal added for each animal. This is given every morning and evening, and hay at noon. When roots are given, the grain mixture is lessened. During the last two months the grain ration is increased.

Ensilage, oat straw, corn stalks and some meal, the latter being increased as the finishing period approaches, is the ration employed by another who feeds for the British market. This feeder considers ensilage extremely valuable not only as a food, but also as a medicine, enabling the animals to assimilate a greater quantity of food than when dry feed is given. Its value is also discovered when it is given to cattle during the winter, which are to be finished off on grass.

In a late issue of *FARMING* Simpson Rennie gave his daily ration for steers as twelve pounds of clover hay, thirty pounds of roots, and ten pounds of oats, peas, and corn, in equal bulk, with ten per cent. of oil meal added. He does not cut his bulky feed or pulp the roots, but he feeds this ration three times a day. The roots are first put in and the meal on top, together with some wheat chaff. The hay is fed long in the rack. Salt is given in a small box. This ration certainly resulted successfully, as the cattle that left these barns for England last May were a splendidly finished lot.

The rations given by Geo. Murdie in a paper read at a Farmers' Institute meeting, and printed in the October 10th issue of *FARMING* are very interesting because they show a variation of the various constituents, without altering the cost to any extent. It will be unnecessary to refer to these again, because any reader of *FARMING* can easily look them up.

FEEDING LOOSE.

Where a feeder has a barn or a shed that can be made weatherproof, he can easily test this method of fattening steers. Of course, the animals must be dehorned, and they should be put into the shed not later than such as are stabled. A feeding rack is necessary in the centre, and the animals should not be too crowded. The rations given will be similar to those given to stall-fed cattle. In mild weather the animals can run in the barnyard for part of the day, at least. They can also be watered outside if no arrangements have been made for supplying the water in the shed. More bedding is required in feeding loose, but there is the compensating advantage of less labor in cleaning and hauling out the manure. Among other advantages are less work in feeding, the better gains made, and the greater health of the animals owing to the exercise they get. They also keep cleaner if properly bedded.

SOME IMPORTANT POINTS.

It should be remembered by all that cattle must be fed regularly if they are to make the best gains. They soon learn to know the hour for feeding and get restless if the time has passed. They also must have plenty of water and be kept quiet. A bad tempered attendant, a snapping cur or noisy children should not be permitted to enter the stable. Then a sharp look-out must be kept for lice and as soon as one is seen, commence clipping the hair in a narrow strip along the back from the tail right up to the head, and dress with black oil and a little spirits of turpentine, or with oil to which a little coal oil has been added, care being taken not to put more than a fourth part of the latter in the mixture. Keep the curry-comb and brush going frequently, because cattle enjoy the process and will rest quietly and digest their food better after being curried.

Ottawa Milk Test

Mr. E. McMahon, secretary of the Central Canada Exhibition Association, Ottawa, sends us for publication the following letter received from J. W. Hart, superintendent of the Kingston Dairy School, who conducted the test at the last exhibition, dealing with some criticisms which lately appeared in these columns in regard to the basis upon which the awards were made :

"Your valued favor of 25th inst. has been received. At the time the test was made a full report was sent you, and it has also appeared in FARMING. I saw the letter in FARMING to which you refer, but, under the regulations of your association, could not write to that journal in reply.

"In answer to your question, I will state that I do not consider that the test was conducted strictly and literally as advertised. Section 272 of the prize list states that a special prize will be given 'for the cow being the largest producer (products from milk only to be considered).' Now 'products from milk' would approximate the quantity of milk given by each cow. If that interpretation were the one meant in the paragraph, Mr. Clemons' cow 'Queen De Kol 2nd' should have been awarded second place, as she stood second in yield of milk. No one claims, however, that the strict construction of the regulation was intended. I understand that the intention of the management was to award the prize to that cow having the best 48-hour record in the test. I can find nothing in section 30 to indicate that any arbitrary standard such as the total capacity of solids in the milk was to govern the test. If the intention of the association had been to award the prize to the cow giving the largest quantity of solids in her milk, a very few words would have sufficed to express the idea, and no misunderstanding could have arisen in regard to their meaning. Section 30 is worded, probably purposely, so as to allow the person conducting the test some discretion in his decisions. If the 'milk test' is to be a feature of an agricultural exhibition, it should be conducted so as to bring out the best points of the competing cows, prove instructive to the owners, and interest the general public. The earlier milk tests of our fairs were *milk tests*, pure and simple. A long step in advance was to base the awards on the total amount of the solids contained in the milk, the standard used at your exhibition of 1898.

A further step has been taken at many of our public milking trials in estimating the fat of the milk as being five times as valuable, pound for pound, as the solids not fat.

Under the conditions governing the test it seems to me that the fairest test would be one based on the commercial value of the products of the milk. The regulations state that the products from milk are to be considered, that is, they are not to be taken as being equally valuable, pound for pound. In the scale used by me the fat was estimated to be ten times more valuable per pound than the solids not fat.

To show how the different standards compare, take 100 lbs. of milk, and suppose it contains 3 lbs. of fat and 8.5 lbs. of solids not fat, which is not far from the average of the milk given by the cows in this test.

Value the fat at 25c. a pound, we figure as follows :

Scale used at Ottawa exhibition, 1899.	
Value of fat, 3 x .25	.75
Value of solids not fat, 8.5 x .025	.21
Total	.96

Scale where a pound of fat is estimated as being five times as valuable as a pound of solids not fat :

Value of fat, 3 x .25	.75
Value of solids not fat, 8.5 x .05	.42
	\$1.17

Scale where all the solids of the milk are estimated to be equally valuable, Ottawa, 1898 :

Value of fat, 3 x .25	.75
Value of solids not fat, 8.5 x .25	2.125

\$2 875

The above comparison will show the justice of basing the awards upon the value of the product, and the unfairness of a standard where the skim-milk is estimated as being three times as valuable as the butter fat. In conclusion, I will state that I tried to conduct the test to the best of my ability and understanding of the regulations governing the same, and regret that any dissatisfaction should have arisen in regard to the awards.

If you see fit, you are at liberty to publish this letter.

Yours truly,

(Signed) J. W. HART.

Kingston, Ont., Oct. 25, 1899.

Important Dairy Exhibit

In connection with their second annual convention which is to take place at Ingersoll, Ont., on January 31st and Feb. 1st, 1900, the Cheese and Butter-Makers' Association of Western Ontario will hold an exhibit of cheese and butter. Special efforts are being made to make this exhibit one of the best of its kind that has ever been held. Cheese-makers should make a note of it and select their show cheese before the September goods are shipped from the factories. The entrance fee is fifty cents and entries are open to members only. Entry forms and full particulars can be obtained from the secretary, Mr. John Brodie, Mapleton, Ont. Entries close on January 21st.

The prizes will be awarded as follows :

Class 1, section 1—1 cheese, white, 15 to 30 Sept. and 1 cheese 15 to 31 Oct.—1st, \$25; 2nd, \$10; 3rd, \$5.

Class 1, section 2—1 cheese, colored, 15 to 30 Sept. and 1 cheese 15 to 31 Oct.—1st, \$25; 2nd, \$10; 3rd, \$5.

Class 2, section 1—1 56 lb. package winter creamery butter—1st, \$25; 2nd, \$10; 3rd, \$5.

Class 2, section 2—10 one pound prints winter creamery butter—1st, \$15; 2nd \$10; 3rd, \$5.

Class 3, section 1—1 case of six bottles Hansen's Danish Rennet Extract, donated by D. H. Burrell, Little Falls, N.Y., for the cheese scoring the highest number of points made with Hansen's Extract; winner to hand the secretary a certificate to that effect.

Class 3, section 2—1 case of five cans Hansen's "Columbian" Butter Color, donated by D. H. Burrell, Little Falls, N.Y., for the butter scoring the highest number of points colored with "Columbian" Butter Color; winner to hand the secretary a certificate to that effect.

Cheese competing for special prize must be made during the first ten days of September.

Butter competing in class 2 will not be eligible for special prize.

Prize winners will be required to sign a declaration that the cheese was in factory named and within dates specified.

Agricultural Education

This subject is receiving more attention in Great Britain of late. By way of accomplishing something definite a strong Agricultural Education Committee has recently been formed, composed of some of the leading agriculturists and those interested in the United Kingdom. At the first general meeting of this committee, held last month, Sir W. Hart Dyke, M.P., presided, and there was a large attendance. The chairman pointed out that the committee was formed with a view to influencing public opinion in favor of changes which they deem necessary in the system of elementary education in agricultural districts. It was agreed that the education now given in rural districts was not such as to tempt the laborers to remain in the places in which they were born. Considerable discussion took place, and the expressions of opinion of those present in regard to agricultural education were crystallized in the following resolutions :

"That proper provision should at once be made at certain of the teachers' training colleges for giving to those who desire it both theoretical and practical instruction in subjects bearing on agriculture and horticulture."

"That, after a certain date to be named in next year's code, instruction in the elementary branches of natural science bearing on agriculture should be made compulsory in rural elementary schools, and that such instruction should be accompanied and illustrated by experiments, and, where possible, by practical work in plots of ground attached to the schools."

Buying Trees in the Fall

By H. E. Van Deman

It is the nature of a large part of those who contemplate planting fruit trees and other kinds of nursery stock, to put it off just as long as possible. By far the larger part of the planting is done in the spring. Laying aside the arguments that might be advanced regarding the advisability of planting in the fall (for this may not be done alike in all sections or with all kinds), there is one plan that I have often followed with much profit. This is the buying of nursery stock in the fall and keeping it for spring planting.

The reasons for doing this are as follows: Nurserymen are usually willing to sell cheaper in the fall than in spring; there is no possibility of injury from the following winter, if the proper care is taken of the stock: there is a chance to select from the entire stock as grown; there can be no spring delays in getting orders filled or from slow transportation; injuries to the roots will be healed and new rootlets formed ready for an early start in the spring. In case trees are bought in the fall, whether planted at once or not, there should be no delay in getting them securely heeled in. If the bundles are hastily stuck in the ground, with only their roots hidden from sight, there is apt to be cause for repentance. Protracted rains, a rush of other work, sickness, or some other hindrance may cause them to stay for weeks, or all winter, where they were expected to be only for a night. I have seen so much damage from insufficient heeling in, although very little on my own grounds, that it makes me weary.

A place should be selected for digging the trenches where the soil is mellow and moist, but not wet, or liable for the water to stand, and where all livestock can be fenced out. Dig the trenches east and west. Throw the earth to the southward, making a long slope from the bottom of the trench to the top of the bank. It should be about two spades deep. Unpack the trees, removing all straw, moss, etc., used in packing. Untie every bundle larger than two or three trees. Provide as many stakes 2 ft. long as there are varieties of trees or plants. Trim the roots as if the planting was to be done at once, and the tops as well. This will allow the wounds to heal, and there will be that much less to bother with and to evaporate sap. Spread out a single variety, putting the roots well down into the trench. Stick one of the stakes beside the trees that will lie next previous, and write the name with a pencil on a smooth place at the top. In like manner lay in the next, and the next, staking each carefully, until the trench is full. Scatter mellow, finely pulverized soil over the roots and tops too. Shake and tramp the earth well among them. Cover deeply, that there may be no damage, and little opportunity for frost to reach them. So fixed, there will be no injury from the sweeping blizzards, rabbits or cattle. The cuts will callous and the rootlets will start out long before the ground will be ready to receive them in spring. Such trees will be better than those planted in the fall, where there is danger of winter injury, either in the orchard or nursery. Bush fruits and grapevines will be equally benefited by such treatment. Strawberries should be handled in the spring only.

Fall Treatment for Hessian Fly

Reports are coming to the Ohio Agricultural Experiment Station, complaining of serious ravages of the Hessian fly in wheat fields. In many cases, it is being claimed that among the early sown fields hardly a plant has escaped attack. The question is frequently asked whether it will pay to resow at this late date. In all cases where the first sowing has been destroyed by the fly, the ground should be replowed before sowing. In fact, it may be said that if fields have been ravaged past all possibility of securing a

profitable crop next year, such fields should be ploughed this fall, or very early next spring, preferably the former. It is probably too late, now, to risk resowing this fall, but it must be understood, that if left above ground, the fly will develop in these fields next spring and go to other fields to work its ravages.

As to how seriously a field must be infested to warrant ploughing under this fall, that is a matter that each farmer must settle for himself. If the soil is rich and the weather during fall and spring very favorable for plant growth, the grain will yet send up a second growth of tillers this fall, which, if they withstand the winter, with a very favorable spring will supply enough straw to produce a part of a crop. But the risk is great, and no one, not on the ground, can safely advise in the matter.

Late sown wheat is escaping, very largely, the fall attacks of the fly, but the close proximity to a seriously injured field will endanger even a late sown field to attack next spring, unless the early sown field is ploughed under before the adult flies appear.—*Press Bulletin*.

Poultry Diseases in the Fall

With the sudden changes from warm and pleasant weather to cold rains and high winds, that are sure to prevail in fall, there come many complaints from poultry raisers. These come mainly from the farmers, for the reason that the expert poultry raiser's experience has taught him that he must anticipate these changes and be prepared for them. The man who lets his fowls roost in trees and on the fences when these fall changes come is the one who complains of having sick hens. He finds some of them sniffing and sneezing, some with matter exuding from their nostrils; some standing around in places where they can find protection from the winds and enjoy the warmth of the sunshine. They will stand there humped up, with pale combs, showing every symptom of sickness. There are some fowls that pass through such ordeals and seem to be none the worse for them. This fact is very misleading, for it causes the owner to wonder why all of his flock are not so hardy, when the wonder should be that any are under such conditions. The man who imagines that his fowls can "pick up" all the food they need during the summer also begins to be troubled with mysterious diseases among his fowls. His calculations were based on theory, not actual facts. He did not stop to think that a moulting fowl requires a varied diet of wholesome food. The flock, if it is a large one, will soon exhaust the natural food supply other than herbage, and fowls cannot be expected to thrive on green food alone. The man who has been resolving he would attend to the needed repairs of the poultry house before fall set in, but never did, is now confronted with ropy fowls. The roosts near the broken window panes, the wide cracks between the sides and ends of the house and the leaky places in the roof have become prolific sources of ailments. Inquiries are then sent out to get information regarding remedies. One man declares his flock has a "mysterious disease"; another has fed "all the corn they would eat, but the fowls will get sick"; another admits the hens have been compelled to find their own living the entire summer and are almost naked, but cannot understand why they should be ailing. In the latter case common sense should proclaim the fact that lack of proper nourishment prevents the hens being dressed in a new fall suit.

What are the remedies for such ills as these? Avoiding the causes that produce them. Neglect has simply borne the usual fruit. The adage that "neglects are costly" never fails to prove true in poultry raising. The man who is continually having so-called poor luck in raising poultry is the one who is always neglecting to observe the essentials that success hinges upon. The good luck man looks carefully after the little details, knowing full well the "little things" attended to in season will prevent undesirable results later on.

Every farmer should possess a well-paying flock of poultry. They should be treated in a strictly business way. They should have a snug house, which should be cleaned out every day, the same as the horse stable. Their food should be of the best and greatly varied. Their house should be free from dampness, and with windows that will allow the needed supply of fresh air and sunshine, which are the true disease dispellers. The windows should be arranged so as to close up tight. The time for fresh air supply is in the daytime, not the night. Pay no attention to the people who tell you the poultry house needs lots of ventilation in winter time. If the poultry droppings are allowed to accumulate—a plan neglectful persons follow—the odors naturally create the impression that ventilation is necessary. The main thing to consider in the poultry house in cold weather is how to keep it warm enough—not how to let in additional cold through unnecessary ventilators. A clean house in winter will not require other ventilation than that which it will get during the day, and even then there are cold days when the windows should not be raised.

Wholesome food, composed of a varied diet, and strict and thorough cleanliness are requisites that no poultry raiser can ignore at any season without increasing cost and inviting various ailments. They are health promoters, and the healthy fowls are the only ones that result in profit. The winter returns from a well-kept flock of healthy hens, when all the proper conditions are intelligently observed, will be very encouraging and will prove there is considerable profit in poultry keeping.—*Baltimore Sun*.

When is a Lamb Fat?

When put into the feed lot under proper conditions, lambs will usually begin to show the influence of good feeding at the end of the third or fourth week. During this time they seem to be getting into good condition for putting on flesh, though it appears that some fat is being deposited internally. Toward the end of that time many of the lambs may be noticed standing leisurely in the sun in a partially stretched posture. This pose in the lambs is a delight to the shepherd. The fattening process seems to extend from the internal regions, and is first in evidence at the tail. It then passes along the back over the shoulder and reaches the neck; from this line it seems to extend down the sides and over the breast in front. There are six main points at which its extension seems most in evidence—at the tail, middle of the back, the neck, the flank, the purse and the breast. Judges of condition handle these different points and seem to arrive at the same conclusion from continued practice in observing the development in any one of them, although a critical examination will reveal that lambs sometimes fatten unevenly, and may be good in one or more of these points and comparatively deficient in others. By feeling the tail-head some will form their opinion as to the degree to which the lamb is fat. Others are satisfied with feeling the back. Many after feeling the tail grasp the neck and base their opinion on the fullness of that part. The flank and breast are often used for further assistance, and some butchers estimate condition from the fullness of the purse. At any of these points, more especially the back, the covering should be such in the prime lamb as to prevent feeling the sharp projections of the backbone. In fact, it can hardly be said that a lamb is really prime unless, instead of a projection of backbone, there is a distinct trough or groove running from the tail to the shoulders, and this covering should extend down over the sides without softness due to excessive fat or oily tissue. All lambs do not fatten as smoothly or as uniformly as herein indicated. In most lambs, however, the worst defect is bareness of the loin and lightness in the hind quarters. With these parts well covered and fully developed, a rather sharp shoulder and peaked brisket may be overlooked. Not only should the flesh be thick over the valuable cuts, but it should be firm. Very often it will be found that soft rough patches will be present about the head of the tail,

owing to the deposition of too much flesh on the back, which may slip from there on the over-ripe lamb and gather at the flank or along the sides in long, soft rolls.—*Prof. John A. Craig*.

Liming Grass Land

In Bulletin 58 of the Rhode Island Station some valuable information is given as to the financial gain from liming grass land. The lime was applied in the year 1894, one ton per acre, at an expense of \$7.50. A limed tract of land and an unlimed one were treated annually to an application of complete fertilizer. This fertilizer was alike in its nitrogen and potash content but varied in the character of its phosphoric acid, nine different forms being used. The aim was to determine the value of lime, and as well the relative value of various forms of phosphoric acid in connection with lime. The yields of hay are for four years beginning with 1896. The average gain per acre for the four years from the one application of lime is 10,958 pounds of hay. Allowing for the shrinkage of hay and cost of lime the net gain from the use of one ton of lime per acre in 1894 in the four crops of hay (1896-99) averages for all the various forms of phosphoric acid \$45.10 per acre. Contrary to current ideas the acidulated phosphates were more helped by lime than the unacidulated goods.

The bulletin concludes: "In view of the fact that many deficiencies of lime nearly approximating or exceeding that found in our own soil have been found quite generally in other portions of the state it must seem astounding if, in the face of those results, more farmers do not begin to use lime even though the first cost seems to them forbid- dingly great."

Vitality of Draft Stallions

The importance of breeding horses from strains which are known to be sound, healthy, and long-lived, cannot be too much insisted upon.

There is a tendency in these days to sacrifice a good many things for showyard honors, and among them not infrequently the constitution of a valuable stud horse. The law of heredity works with great force in the equine race, and, therefore, defects and weaknesses, either of conformation or constitution, which appear in the sire or dam, are pretty certain to be reproduced in the offspring. A sound mare bred from sound parents and grand-parents mated with a stallion bred likewise will, in the ordinary course of things, produce a sound horse, and sound horses are always saleable, if not for the show ring, at least for the shafts.

In horse stock it is curious to notice the certainty with which little peculiarities of sire or dam appear in their progeny. For instance, a rat-tailed parent will almost invariably breed stock which are thin-tailed, and the writer knew a mare whose stock could be identified by a peculiar shape of the points of the ears. The strain imposed on the fashionable sires of to-day is very great, and especially so if they are exhibited to any great extent. The feeding-up process, railway traveling, and showyard drafts, all tend to have an injurious effect on the health and life of the strongest horse; and yet there have been, and are still, sires which have stood this for years, and proved themselves capable of producing sound and valuable stock. The most notable instance of a long-lived Shire stallion is unquestionably that of Lincolnshire Lad II. 1365 (and Argus will remember that he was a son of the late Mr. Drew's Lincolnshire Lad 1196 or K.). This grand stock horse was, I think, twenty-four years old when he died, and was a success at the stud up to the very end. It is hardly necessary to say that his descendants literally "hold the stage" for prize-winning, for real worth, and, I think, for vitality.

Another Shire stallion, i.e., Bury Victor Chief, must also be possessed of a sound interior and any amount of vitality.

It will be remembered that he came up to Islington year after year, looking fit and well, and won every time, and now at ten years old he is a sire with a great and growing reputation.

These instances prove that there are horses which can stand the stress and strain of modern life, but on the other hand there are many—very many—which break down under it, and breeders should have an eye to these things when the mating season comes round.

The law of the "survival of the fittest" seems to hold good in this matter, so it remains for horse owners to patronize the horses which survive, the strains which are remarkable for robustness and longevity, which have sufficient strength and stamina to throw off and overcome the baneful effects of the artificial life under which they are too frequently kept.—*English Live Stock Journal*.

CORRESPONDENCE

Prince Edward Island Notes

To the Editor of FARMING:

Pork-packing.—M. M. C. Delaney, of North Tryon, has made arrangements for the establishment of a pork-packing business at Summerside, and expects to have it in operation in a few days. This will make two establishments of the kind in Prince Edward Island, and, as competition is the life of trade, it is expected that better prices will be received for hog products than heretofore. At present the Charlottetown concern is paying \$4 to \$4.25.

Lambs.—S. H. Jones, of Sabrious Flats, shipped from this Island, from the 12th to 19th October, 2,500 lambs to Boston. The weekly shipments for the past month average 1,000 a week. Better prices are being paid this fall than formerly.

Two chickens-fattening stations are in operation on the Island, one at Summerside and the other at Charlottetown. Mr. A. W. Woodward, of Ottawa, is the superintendent. Some 600 of their fattened chickens were killed and dressed last week for shipment to England in cold storage by the new trans-Atlantic steamer, *Lake Huron*, from Charlottetown direct to Liverpool. The results of this first shipment of fattened chickens from this province will be watched with much interest. Proving a success, as it no doubt will, the business of raising and fattening chickens for the English market will soon reach large proportions.

Direct Steamer.—The Dominion Government has placed on the Charlottetown-Liverpool route the S.S. *Lake Huron*, of the Elder-Dempster line, provided with cold storage facilities. Butter, which for the want of cold storage shipping facilities could not be handled to advantage during the summer, may now be shipped, as may also other perishable products. Her first trip last week was made from Charlottetown. She carried a valuable cargo, comprising 1,600 sheep; 100 head of cattle; 2,000 boxes cheese; 1,000 packages butter; 3 tons poultry; 1,800 cases eggs; 1,000 bags oats; 1,200 cases canned meats; 50 tons hay; 100 bbls. oysters; 60 bbls. apples; 3 tons dry fish; 60 cases cranberries. Total value, \$58,330.

Large Cattle Shipments.—Mr. A. W. McCallum, of Minburne, Iowa, came to Prince Edward Island about five weeks ago for the purpose of buying a number of cattle. He succeeded in buying up 197 head, mostly young stock, some of which were fair and some inferior, though Mr. McCallum appeared to be satisfied with his purchases, and thought that they would turn out all right. This gentleman has about ten thousand bushels of corn to feed this winter, and will use much of it to fatten these cattle. On Wednesday of last week Mr. McCallum shipped these cattle from Summerside. Mr. McCallum speaks in very high terms of the treatment he received from the farmers during his stay among them. He found them exceedingly

hospitable and friendly. If the gentleman can make a profit out of these cattle after paying freight from here to Iowa, some 2,500 miles, then what are our own farmers doing?

Markets.—On 3rd inst., prices were: Potatoes, 16c. a bushel; demand at that price fair, but farmers holding back, as those any distance from market will hardly pay for the hauling. Oats, 28c.; demand moderate. Hogs, \$4 to \$4.25. Buyers for the St. Pierre market were paying, last week, \$4.50 for nice shotes, not fat, and \$3.75 for sows and stags. Cheese-making ended for the season on October 31st, and has changed to butter-making. A large quantity of the latter will be made during the winter. Cheese now sells at 11¼ to 11½c., and butter 22c. Lambs fetch \$1.50 to \$1.75; a few fetching \$2. Wheat and barley is in good demand at Montreal prices. The supply, however, is limited.

J. A. MACDONALD.

Hermanville, P.E.I., November 3rd.

Mrs. Jos. Yuill's Experience in Improving Chickens

To the Editor of FARMING:

Having had considerable trouble trying to raise chickens from eggs laid by hens which had laid all winter, and having had my attention drawn to it occasionally at Farmers' Institute meetings, I came to the conclusion that if a hen laid well all winter she was so much exhausted that she could not produce fertile eggs in the spring, the chick will form in the shell but when the time comes for it to hatch out it has not strength enough to separate itself from the shell, and, therefore, becomes exhausted with vain efforts and dies.

I thought I would try if something could be done to produce live chickens. In the spring of 1897 I set more than two hundred eggs (my hens laid extra well that winter) and only raised about fifty chickens, the remainder all died in the shell or shortly after being hatched.

In October, 1898, I selected twenty of my best pullets which were hatched in May (I prefer the pullets hatched in May as the earlier ones would lay before the time of year I would want their eggs (for hatching) and put these with two male birds in a division of the sheep barn. The temperature was so low as to freeze water, but not low enough to freeze their combs. I allowed them the freedom of the barn yard every day. The hen house was supplied with dust-bath, grit, and a muslin bag of sulphur was hung in the hole through which they went out and in, their heads touched the bag every time they went through the hole and shook a small quantity of sulphur on their backs, to prevent vermin.

We feed them half a gallon oats per day until the first of February, when I gave them a little better food, as I wished to have them laying by the first of March. I then gave them for breakfast one pound of clover, cut fine, put in a pot with one pint of water brought to a scalding heat, then set off to steam for ten minutes; put two pounds shorts and one ounce ground meat in a pail, pour the clover over and mix thoroughly. Just have the mixture damp, but not wet. For dinner I gave them a mangel with a strip of peel off each side hung to the ceiling by a wire, and also hung up a head of cabbage and a sheaf of oats. When this supply becomes exhausted I remove them and put up fresh ones. For supper they got half a gallon oats. These pullets commenced laying the last week of February and laid until they began to moult in August, only one of the twenty pullets became broody during the summer.

I commenced setting their eggs during the second week in March, under hens which had laid during the winter and had become broody. In March and April I set fourteen hens and sold a number of settings of eggs. The poorest

returns we had were eleven live chicks, but in most cases every egg brought out a live chick. The reports from those we sold settings to were equally satisfactory. They were the strongest chickens I ever had. On the evening of the nineteenth day after the eggs were set they would be chipped, and next morning would all be out ready for their breakfast. To prove that my conclusions were correct I set two hens the fifteenth of June, and the results were not nearly so good; the eggs required twenty-one days to hatch; the chick with difficulty broke the shells, and in some cases had to be taken out. They were not nearly so strong as the early ones, and at time of writing they still show their delicate constitutions.

My March and April male birds weigh from eight to nine pounds each, while our June birds only weigh from four to five pounds.

I am thoroughly convinced that, to get good, strong, healthy chickens, the eggs must be saved for setting during the early part of the hens' term of laying. Many honest breeders are blamed for tampering with their hatching eggs before sending them out to customers because the results were poor, while the reason was, the hens had laid too long and had expended their vitality.

MRS. JOS. YUILL.

Carleton Place, November 7th, 1899.

Manuring

Home Resources of the Farm

To the Editor of FARMING:

Mr. Thomas Laidlaw's letter in October 31st number of FARMING suggests to me some further remarks on the manuring question. It is true that such "fertilizing agents as the home resources of the farm provide" should have serious consideration, but it seems to me that one of these "home resources," and to my mind an all important one, is almost wholly neglected. I refer to humus, the first essential in improving the physical condition of the soil, and providing a basis for plant food and for the dissolving of the mineral ingredients by the humic acids secreted. Judged by simple examination by sight the clay and sand is changed to a mould by a plentiful supply of vegetable matter to form humus. This improves the texture of the soil, making it more friable and less liable to pack or settle solid, and bake. Such soil retains moisture better, but what is more important the water in such soil is more thoroughly impregnated with dissolved food ingredients and the plants flourish and produce fruit of a better quality, and earlier, as they do not require to absorb such a large quantity of liquid to obtain a living. As one result the produce of such lands is firmer and less watery, being better keeping fruit and roots and harder grain. It is the same difference as occurs between the skim milk-fed calf or the one fed on whole milk, between the feeding value of milk rich in solids and watery milk. The lands from the wild prairie or primeval forest were rich in humus from the decomposition of the accumulated annually dying vegetation. Our methods of farming, and depending entirely on the meagre supply of matter obtainable from our barn-yards, has pretty well exhausted the humus earth supply we inherited. It is within the power of every farmer to renew this supply by the growing of green crops, more particularly clover and peas, and turning them down green with the plow. This is a "home resource" of the farm, the neglect of which accounts nearly always for the failures to obtain successful results from the use of the various fertilizing agents, including farmyard manure. Unfortunately, the men trained in agricultural colleges who undertake to instruct farmers on the clover manuring question too frequently tell them that a crop will prove as beneficial for manuring if fed to stock as if it is ploughed down green. Methods of detail work in caring for and applying manures are secondary; a knowledge of principles and the far-

reaching effect of our work is eminently more important. For instance, take the matter of packing fruit for export. Great stress is laid upon the detailed methods of packing, but all the care one may lavish upon this operation will frequently fail to save fruit which is watery because soil waters from which the plant fed were so poor in food ingredients that it had to consume an immensely greater quantity of water than it was able to successfully throw off for evaporation. A crop on poor, insoluble soil uses hundreds of tons more water per acre than a crop on a richer mould, but, even though the one may produce as much as the other, the produce from the poor soil is softer and inferior, either as food or seed.

You cannot do a greater benefit, Mr. Editor, than encourage correspondence on the manuring question, but the discussion must be broad and deep, and the result of carefully matured thought. We should carefully keep in mind that it is the condition more than the kind of soil which must govern the work of manuring.

T. C. WALLACE.

Fernside, November 9th, 1899.

Plant Transpiration and Soil Fertility

To the Editor of FARMING:

The relationship between the fertility of a soil and its moisture requirements is seldom considered by the best authorities, yet it is quite evident that a poor soil requires more moisture to produce a crop than a rich soil; while either one without the moisture necessary may not produce a paying crop at all.

Some recent experiments conducted by a French scientist show very forcibly in detail the importance of having the maximum fertility in the soil so as to insure the minimum consumption of moisture in crop production. The experiment was made with grass grown from a poor clay soil in the one case, and in the other instance a rich phosphatic soil was used to which was added dried blood and nitrate of potash. The same degree of moisture was constantly maintained in both soils during the growing of the crop.

The relative consumption of moisture in both cases was determined at three different periods. For every pound of dry weight produced the following amounts of water were used by the plants:

1st period, poor soil, transpiration =	1190	grams.
" " rich " " "	= 550	"
2nd " poor " " "	= 1053	"
" " rich " " "	= 581	"
3rd " poor " " "	= 1084	"
" " rich " " "	= 585	"
Total—poor " " "	= 3327	"
" " rich " " "	= 1616	"

From these results the crop from the poor soil consumed nearly double the amount of moisture required by the crop from the rich soil. The fundamental principle to be deduced from such an experiment is to have the maximum balanced fertility in the soil, rich in nitrates, potash and phosphates. Under such a condition there might be less pessimism and fault finding with the weather during a dry season. Many a farm, however, may be abundantly rich from a chemical standpoint, but in overlooking the importance of keeping plenty of humus matter in the soil, such fertility is not profitable. Too much importance cannot be emphasized in plowing under plenty of clover and green crops to supply humus, and thus increase the capacity of a soil to hold moisture. With this principle in mind in soil cultivation, fertilizers may more often return a profit on the investment.

W. J. THOMPSON.

Bronte, Ont.

The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' \$1; Sheep Breeders', \$1; Swine Breeders', \$1.
BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Associations allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary.
Parliament Buildings, Toronto, Ont.

FARM HELP EXCHANGE

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to F. W. Hodson, Secretary Live Stock Association. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected, and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance, to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

Help Wanted.

A competent stockman required for farm and ranch near Calgary. If satisfactory will be placed in charge as working foreman. Engagement, March 1900. None but workers need apply. No. 157. a

Experienced stockman, must be capable of taking complete charge of herd of thoroughbred cattle. Must be yearly engagement, salary \$200 per year. Would like a man about 30 years of age. Apply giving full particulars as to experience, also references. No. 160. a

Married man as gardener and assist in caring for stock in winter. Wages \$1.00 per day and sufficient land to plant necessary vegetables. A house is ready for occupation for small family. No. 161. a

Good steady man wanted for work on a 100-acre grain farm. Apply stating wages with board and washing. Good place for right man. No. 162. a

Wanted a steady, reliable young man, strictly temperate, for farm work. Farm has 90 acres, one-half under grass. Good home for right man. No. 163. a

Situations Wanted.

Experienced stockman and general farmer wishes a situation. Experience has been obtained on a stock farm near Toronto. Strictly temperate. Good references from previous employer. No. 158. a

Position wanted as working foreman. Has been used to running engine, also carpenter work in addition to farming. References supplied. No. 156. a

Position wanted as farm manager, experienced and good references. No. 159. a

N.B.—Where no name is mentioned in the advertisement apply to F. W. Hodson, giving number of advertisement.

Stock for Sale.

The next list of stock for sale will be published in FARMING, November 21st. Members of the associations are requested to forward their lists of stock for sale to the secretary not later than November 14th.

Association Car of Thoroughbred Stock.

A number of applications have been received for space in a car for Manitoba and the Northwest. It is expected that a car will leave about the middle of November. Any person wishing to send registered cattle, sheep, swine or horses to Manitoba or the Northwest should make application for space at as early a date as possible. Full particulars may be obtained from F. W. Hodson, Parliament Buildings, Toronto, Ont.

Some American Live Stock Associations Convene.

Five Recording Associations have fixed upon the same week this year for holding in Chicago their annual

meetings, to wit: the week ending November 25th, 1899. Beside their regular meetings it is expected to hold at the Auditorium Hotel, Chicago, at 9.00 a.m. on Thursday, November 23rd, a meeting of the American Live Stock Association, an organization formed in 1892, and whose dry bones are to be revived, or laid to rest. One and one-third round-trip rates to Chicago can be secured by obtaining a certificate from one's railroad ticket obtained at regular rates at starting point, which certificate must be countersigned at Room No. 1 Auditorium Hotel, Chicago, to make it available for one-third fare when purchasing return tickets.

The regular annual meeting of the members of the American Aberdeen Angus Breeders' Association will be held at the Leland Hotel, Chicago, Ill., on Wednesday, November 22nd, 1899, at 8 p.m.

THOS. MCFARLANE,
Secretary, Harvey, Ill., U.S.A.

The Ventilation and Temperature of Stables.

By Dr. J. W. Smelser, V.S., Woodbridge, Ont.

The proper ventilation of our stables has great influence in determining the health and vigor of the animals lodged in them. Although attention of late years has been directed to this subject, and considerable improvements carried out in the management of some of our best stables, yet, as a general rule, the ventilation of the majority of stables will be found very deficient. The breathing of pure air is essential to the health of man and beast, and in proportion to the purity of the air inhaled will be found the vigor and efficiency with which the functions of the body will be performed. There are two chief sources from which the impurities of the stable are derived, namely, the changes produced in the air by the process of respiration and the gaseous matters which are formed by the decomposition of excrementitious and other refuse matters owing to neglect or the want of proper drainage. The air in its ordinary state consists of two principal gases, namely oxygen and nitrogen, about twenty-one volumes of the former and seventy-nine of the latter, in addition to small quantities of carbonic acid. Either oxygen or nitrogen in a separate state or combined in any other proportions would prove destructive or injurious to life, but in the atmosphere they are blended together in such proportions that the destructive properties of each are neutralized.

The function of respiration com.

prises the twofold process of inspiration and expiration. At each inspiration made by the animal a considerable quantity of air passes into the lungs, and having penetrated to the remotest parts of the bronchial tubes enters the air cells, thence through the capillary vessels into the blood which has been rendered impure in its circulation through the system. A peculiar change here takes place between the air and the blood. The oxygen of the air combines with the blood and uniting with the carbon contained in it which renders it impure, forms carbonic acid, thus rendering it again fit to pass on and supply the wants of the system. The carbonic acid and nitrogen (both in their present state destructive poisons) are expelled from the lungs by the process of expiration into the surrounding atmosphere. The effect of several horses being shut up in the same unventilated stable is to completely empoison the air, yet even in the present day, particularly in agricultural districts, there are too many who carefully close every aperture by which a breath of fresh air can gain admission. The result is with the breathing of every animal the contaminated air passes again and again through the lungs. The blood cannot undergo its proper and healthy change, digestion will not be so perfectly performed, the nervous system will suffer and all the functions of life be more or less impaired and under such conditions one need not be surprised at finding sore throat, inflamed lungs, diseased eyes, etc., making their appearance.

Another source of impurity to the air in stables is the presence of deleterious gases resulting from the decomposition of the excretion of the animal and vegetable substances. The principal gases involved are the compounds of sulphur and carbon with hydrogen and ammonia, all more or less injurious to the health. When a person just enters an ill-ventilated stable in the morning he is annoyed not only by the heat of the confined air but by a pungent smell resembling hartshorn. The urine contains exceedingly large quantities of compounds easily converted by decomposition into ammonia. Influenced by the heat of a crowded stable and possibly by other decompositions that are going forward at the same time, this ammoniacal vapor begins to be given out rapidly almost immediately after the urine is voided. When disease makes its appearance in these badly ventilated stables, is it strange that it spreads with alarming rapidity? When influenza appears in the spring time or in the fall it is in very many cases due to this cause. The horses of a small establishment rationally treated have it comparatively seldom or have it slightly, but in crowded stables it is sure to prove itself most fatal. The experience of every veterinary surgeon and every large pro-

prietor of horses will corroborate this statement.

Of nothing are we more certain than that the majority of maladies of the horse, and those of the worst and most fatal character are directly or indirectly to be attributed to a deficient supply of air, cruel exaction of work and insufficient or bad fare. While the stables of the cavalry forces of Great Britain had poor ventilation the fatalities of disease were enormous, but after the sanitary conditions were improved diseases which formerly affected whole troops almost entirely disappeared. The poisonous effects of carbon monoxide, which is the gas used for lighting purposes, are well known. It is a common occurrence for whole families to be prostrated from its effects. It has a great affinity for the blood, and displaces the oxygen, death being the result. In like manner the other gases previously mentioned, although perhaps not so poisonous, have a serious effect on the blood. They have a tendency to displace the essential elements of inspiration and life, causing a pathological change in the system.

The temperature of the stable is also another important factor. This should seldom exceed 70 or 75 degrees in summer, or below 40 degrees in winter. The hot stable is thought by some attendants of horses to produce a glossy coat. In winter a thin glossy coat is not desirable. Nature gives to every animal warmer clothing when the cold weather approaches. Horses used for agricultural purposes especially require a thicker coat in order to protect them from the surrounding cold, just as human beings put on additional and warmer clothing, and their comfort is increased and health preserved by it. Warm clothing, even in a cool stable, with good attendance, will keep the hair sufficiently smooth to satisfy the most fastidious. The overheated stable saves much grooming, but at the same time sacrifices the health of the animal. The horse stands, say from twelve to twenty-four hours, and sometimes even longer than this, in this unnatural vapor, and then he is stripped of his clothing and led into the open air, where he is kept sometimes for hours in a temperature of 15 or 20 degrees or more below that in the stable. Putting the inhumanity of this out of the question, must not the animal thus unnaturally treated be subjected to rheumatic and catarrhal affections? The return to a hot stable is quite as dangerous as the change from a heated atmosphere to cold air. This is frequently seen where horses are left out late on pasture in the fall of the year, then taken and confined in close stables, and as a result some disease is contracted likely to be febrile in character. The sudden change of temperature, whether from heat or cold, or *vice versa*, yearly des-

troys thousands of horses. The stable should be large in proportion to the number of horses it is destined to contain. Box stalls are preferable to the ordinary open stall, inasmuch as they allow considerable space for the animal to move around and exercise, and lie and rest after a hard day's work. Boxes are also necessary for sick horses and especially when suffering from any contagious disease. Each box should be about fifteen feet long by ten feet wide, with side walls nine or ten feet high; a pipe should run through to the roof, or else connect with one that does go to the roof of the building, to allow gases generated to escape. This is especially necessary where horses are kept in back stables. Ventilators should also be put in the wall at as high a point as possible from the floor so as to allow the air to pass in above the animal. There are different modes of arranging ventilators and any plan will do as long as the animal is not exposed to draughts.

Why I Raise Turkeys.

By Mrs. Graham, Ailsa Craig, Ont.

A great many people, especially men, have foolish notions about turkey raising. I hope to be able to convince some one that turkeys are not quite so undesirable as they have been painted. I raise turkeys because I believe it pays. I will give no fancy prices nor fancy profits but just the prices the buyers pay for shipment to the British markets, six and a half cents a pound. Supposing we begin in the fall. We purchase say four females and one male. If young birds are chosen the hens should weigh not less than 12 pounds, though some keep so small a breed that they can hardly get them to weigh 9 pounds, but we will buy only 12-pound hens, and the male should be 16 pounds and should be pure-bred. \$2.50 or \$3.00 is a big price to pay for a turkey, but we will pay it for we want no scrubs when the shipping season approaches. We have now at 6½c. a pound invested \$3.12 in hens and \$2.50 in a gobbler, making \$5.62 in all or say \$5.50. The average annual increase is ten young birds raised for each old bird, making forty, a fair-sized flock. Some succeed in raising 20 and 25 to each hen, but we will be content with ten the first year. These should weigh not less than 10 pounds for female, and 16 for males. In the fall some will probably go higher and the flock will average about 13 pounds or a total of 520 pounds. This at 6½c. will bring in round numbers \$34.00. It costs about 80c. to feed a full grown turkey for a year so that we have to deduct this from our cash on hand. Five birds at 80c. each for food (though a great deal of this would have gone to waste) costs us \$4.00 and as a bag of meal goes a long way in feeding a flock of young

turkeys we will allow \$1.00 for their food and expenses, making \$5.00 for food for the whole flock. This makes our investment \$10.50 and leaves our income \$29.00, or in other words \$10.50 drew in one year \$29 of interest. A man would think he was getting rich if he invested \$29 and gained \$10.50. Let us hope he will consider it profitable to invest \$10.50 in the hope of gaining \$29, which if figured out will mean 276 per cent., and if the profit in cash should be away below the average you can always be sure of 5½ per cent. which is called good interest. I have not invested anything in buildings or fences for the reason that if one can use a hammer and saw there are always old boxes and boards that would be wasted if they were not used for coops and pens, while a warm house is not needed, as, except on very cold nights, trees and fences answer the purpose. But the profits might be larger with a comfortable house and well-fenced pasture. I raise turkeys because I find it brings in more cash than any other branch of farming.

TURKEYS AS INSECT DESTROYERS.—There is another and more important reason why turkeys should be kept. It is that they are great destroyers of injurious insects. I would back a flock of one hundred turkeys against any grasshopper machine. These are useful not only for grasshoppers, but turkeys will hunt and devour all kinds of destructive insects. They are constantly destroying insects. The young birds should be hatched in May and June so that in July they are ready to follow the old birds on foraging expeditions, and they will thus capture many of the insects before they have a chance to multiply. A few years ago I had to spend some hours each day herding the flock to protect them from hawks. The grasshoppers were plentiful, and I noticed that though traveling along the sides of grain-fields the birds would never touch the grain but would keep a sharp look-out for insects and worms. One day I was accompanied by a number of children and they took pity on one poor, lame turkey. I carried it and they caught grasshoppers for it and it ate all they could catch. By that time the others were full and ready for a rest while his crop was still comparatively empty. None seemed too large and none were too small to escape their sharp eyes. We supposed they would eat at least fifty five for an average meal, and, as after having an hour's nap, they were ready for another meal, we concluded that each bird would eat five meals a day or 275 grasshoppers, so that our flock of 40 at six weeks old would destroy eleven thousand in one day. At the age of three months their capacity would be doubled and a few million grasshoppers less on a farm would be the result at the end of the season.

REQUIRE LITTLE CARE.—Though very much has been said and written

about the weakness of young turkeys and the amount of care required to bring them to maturity, yet I raise turkeys because of the small amount of care they require. It is true that the early birds require constant attention for four weeks or more, yet after that time they require no looking after except to see that they come home to roost, unless of course they are bothered by hawks. A friend of mine who lives on the prairies raised 85, keeping them partly confined for three weeks. Then they disappeared, and she said she saw nothing more of them until in the fall they began to come to the buildings to roost. There is another reason why Ontario women should adopt this business. It gives an excuse for doing less housework and for living out of doors in the early summer, and any man who values his wife's health will prefer to see her living in the poultry-yards instead of running a sewing machine, a scrubbing brush or a rolling pin, for he will know that she is getting farther from the doctor every hour she spends out of doors.

Perhaps the most important reason for raising turkeys and the one that appeals to most people, is the value of their flesh as a food. There is no meat raised on the farm that is so delicate and wholesome as roast turkey. 'Tis true at this time of the year it is expensive if one must buy, but after all when we consider the cost of production, it is cheaper far than beef, pork or even chicken and duck. Then let us all raise turkeys because they are good to eat.

HOW I RAISE TURKEYS—The first essential in raising turkeys profitably is to procure good sized, well bred, healthy, vigorous parents. From experience I prefer young hens. They, as a rule, lay a greater number of eggs early in the season and do not wander far from the buildings to conceal their nests. I like to have them always quite tame so that I can go among the flock at any time. The old birds should not be confined in a warm building, nor confined at all, except in extremely stormy weather, and they should not be kept fat. Soft shelled eggs and fewer of them is the result of overfeeding as well as those delicate young turkeys we hear about. I like to have some large boxes or nests under trees near the buildings so that the turkeys when they want to lay will imagine they have found nicely hidden nests. After, however, the first lot of eggs is laid in the stable I like to have a goodly number hatched about the same time for I prefer turkey hens to mother them, but I usually set the eggs under the best barnyard hens I can get. Plymouth Rocks make the best sitters, and sometimes I set a turkey hen at the same time, but I usually break up the incubator inclination as soon as possible so that they will begin laying soon again. With four hens one can almost be sure that some one of them will be inclined

to hatch by the time the eggs under the three or four Rocks are hatched. I like the old turkeys to sit two or three days at least. When the young birds appear, if the nests are rat proof, I leave them for 24 hours. Then I put from 15 to 25 with the old turkey in a nice light, fair-sized coop and she looks at them and decides to adopt them, and I leave them to get acquainted. The evening is the best time. When the young birds are 24 hours old I feed with bread crumbs and I feed at least five times a day. I always enclose the coop with a board pen a foot high, or one of one-inch mesh netting might be preferred if no boards are on hand. In the pen I put a heap of gravel and a heap of loose dust or ashes. These are great preventives of disease and parasites, and "prevention is better than cure." Sometimes I keep the mother turkey in the coop, sometimes let her wander while the young are in the pen, but both pen and coop should be moved often to fresh, short, green grass. I like to have two flocks near, so that after four or five weeks when the old birds and young are allowed their liberty all will go in one flock for there is safety in numbers. An orchard or small fruit garden is perhaps the best place for them to roam in as they are then partially hidden from the hawks.

ENEMIES TO TURKEYS.—Hawks, rats and lice are their greatest enemies. One should have a rat proof coop or house in which they can be shut every night, and they should not be kept cooped near buildings or rubbish piles, even in the day if rats are plentiful. If one shows the least sign of drooping in the wings it should be examined on the head, neck and between the flight feathers of the wings, for insects are usually the cause. Butter or grease applied, or dusting with insect powder will kill the lice. There are several remedies, but a pile of dust that they can use will be a great help. There are more turkeys killed by lice than from all other causes, though improper food is a cause of disease. Variety is the spice of turkey food, so I vary the bread crumb diet with thick milk, soft curd, onion tops, oatmeal and custard from infertile eggs, and as they get older I make a porridge of corn meal, pea meal, oat or wheat meal, etc. Some use shorts wet with water, or rather moistened. I never feed sloppy food to anything except pigs. Corn meal raw is not good. Green food of all kinds is good, as are insects if they can get them, and let there be no scarcity of pure water. I have never used tonics or patent medicines, though they may be good. I always take a long time feeding them to see that each one gets enough. I like to watch them and I sit down in the pen and let them climb all over me and eat from my hands. I always call them from the first so that they will know my voice and answer. After they are four or

five weeks old I let them run, earlier if there is only short grass near. You often hear that young turkeys should not get their feet wet. I do not drive them in out of every shower, for it is only when their bodies are wet that they get chilled. If they are out with the old turkey she will cover them until the shower is over and everything bright again, but if there is long grass they must be kept in in the morning until it is dry, but after the back feathers are out they will almost make their own living. If, however, one does not want to cause their neighbors to swear, or have some of the flock lost it is necessary to have them come home every night. A well-trained flock will give no trouble. If when they are first let out they have not returned at a reasonable hour one can be sure they are not far away and a few calls will bring an answer and they will come towards one, when they should be driven home and fed, and a little food should be given every evening until they begin to go into trees to roost. I encourage them in this as early as possible as then they are off one's hands and will need no further watching. A light meal in the morning will be acceptable, and for two weeks before marketing they should be fed corn twice a day in addition to the regular food of insects, scattered grain and weed seeds which they find themselves.

Advantages of a Registered Dairy Cow.

By Ezra Michener.

In looking over some old papers, recently I came across the statement of a dairy friend, who said he was endeavoring to make his herd reach the 200 lb. butter notch for the coming year. The previous year it was 175 lbs. He gave as his main reason for the increase the fact that the herd would include a greater number of registered cows than before.

I do not think that any of us will admit that merely because a cow is registered she will give any more milk or make any more butter than she would if nothing whatever were known of her breeding. But the fact that the dairy cow should also be a registered animal, has as much to do with improvement along the line as anything which can be mentioned. The generally considered dairy breeds are the Guernsey, Jersey, Holstein and Ayrshire. All have their good qualities, and the situation and tastes of the dairyman and breeder will decide the question of breeds or grades as may best be fitted for the purpose intended. We all know that there are many excellent grade or common cows, making as much butter as registered ones, but yet lacking the power to transmit their good qualities to their offspring which an equally good registered cow possesses.

I saw a few days ago three herds of Guernseys, two of them registered herds and one in which only registered bulls had been used for many years. No man living could tell by their appearances which were registered and which were not, as all were indeed splendid specimens of dairy cows. Then where is the real advantage of a registered cow? Why is she any better than a grade or common cow? In the first place, without registered cows and bulls such herds as one of the above mentioned could not exist, as a registered sire would not be obtainable for starting in that line of improvement. The registered cow has been bred by careful breeders for generations, and her good qualities have become fixed, and are transmitted to her progeny as long as the dairyman works with this idea in view. It will not do to enter the breeding ranks with good stock for a few years and then accept anything cheap that may and very likely will, be inferior and thus lose years in work, and be forced to start over again to retain the ground lost.

If we look over the dairy districts of the country, we see a vast improvement in the cattle near where registered herds are kept, as nearly all, when they become acquainted with the high colored rich milk of the Guernsey cow, want to have at least some grades in their herds and will patronize a registered bull for that purpose, if they feel that they are unable to start with thoroughbreds. Perhaps as much benefit has been secured by this class as by the owners of registered animals. They, however, do not have the satisfaction of knowing that they have been the prime cause of this great improvement around them. It is left to the breeder of the registered animals to know that the seed he has sown has fallen in fertile ground, that he has helped his neighbors equally with himself.

I do not think anyone who breeds registered Guernseys in the right way can fail in obtaining a measure of success. Their good qualities have become almost certainly transmissible; and this positive fixed type is only possible where registration and the using of only the best animals on both sides are faithfully carried out. This reasoning applies to all kinds of improved stock. Nothing but the best males should be used and they should be selected with a special object in view, not chosen because they are cheap.

An angry small boy was pelting stones at a noisy dog when a venerable passer-by stopped and addressed him. "Little boy," the stranger remonstrated, "don't you know you should be kind to dumb animals?" "Yes," replied the angry boy; "but what's dumb animals got to do with yelping dogs?"

Process for Preserving Milk.

Adolf Brecher, of 2, Liechtensteinstrasse IX., and Adolf Kittel, of 19, Herthergasse, V., Vienna, so says the *Dairy*, are the inventors of a process for preserving milk. They take unskimmed milk as it comes from the cow and subject it to a temperature of about 40 degs. C., until the moisture is completely evaporated, the resultant being then subjected to complete desiccation in suitable drying chambers, in which the temperature should not be higher than that mentioned. A higher temperature is avoided, as it would render the milk difficult of solution. After the complete desiccation of the milk thus evaporated, it is ground to a fine powder, and charged into cans which are hermetically closed. With a view to increase the keeping property of the milk powder, and to make it more readily soluble in water, the unskimmed milk should, prior to its being subjected to evaporation, be served with a quantity—say, from about one-tenth to one-seventh per cent.—of an alkaline carbonate, such as bicarbonate of soda, which, when combined with fatty matters, is capable of forming a compound soluble in water. An addition of sugar in the same proportion, either before or after evaporation, is also advantageous. The milk powder may be preserved for years in hermetically closed vessels without its composition being affected.

What is Good Meat.

Poisoning by alimentary substances is so frequent, and the grave symptoms following the ingestion of tainted food are often so transitory, that their causes elude detection. Recently it has been proposed to make use of the clumping reactions, made familiar by the Widal test, to determine the bacillæmic qualities of meat, and it would seem that the method promises much. It may be wise to recall a few of the characteristics of sound meat. Good, wholesome meat is neither of a pale pinkish nor of a deep purple tint. It has a marbled appearance, from the ramification of little veins or intercellular fat; the fat of the internal organs especially is firm, hard and suety, and is never wet; whereas that of diseased animals is often soft and watery. Good meat has but little odor, whereas diseased meat smells faint and cadaverous. Good meat bears cooking without much shrinking or losing much of its weight, but bad meat shrivels up and boils to pieces—this being due to the larger proportion of watery and gelatinous material, and the absence of true muscular substance. Under the microscope the fibre should be clear and well defined, and free from infusorial animalculæ, while that of diseased meat is sodden as if it had been soaked in water; the transverse streaks are indistinct and wide apart, and animalculæ abound in it.—*Sanitary Record*.

The Farm Home

My Library.

By MEGVRA.

Being among the unfortunates who have no special room for a library and also having very little ready cash to spend in handsome furnishings and in reading matter, but having a love for books and journals, in a few years I have collected a decidedly mixed lot, which, stored in boxes and out-of-the-way places, were almost useless. As handsome writing desks cost money, which might be spent in fresh reading matter, I decided to build my own desk and book-cases. Of course a woman's substitute for walls is a curtain, therefore I curtained a small room in the best lighted corner of the upstairs big room. With its back to a wall and one end beneath a window which throws the best light along it I placed my desk. This is home-made of wide boards, closely fitted together and of suitable dimensions; instead of legs as a support for this table top two narrow boxes of the proper height and equal in size and shape were placed and nailed. These open towards the front and conveniently hold a goodly number of home-bound volumes of women's journals, etc., while there is still plenty of room between them for the writer to sit.

Above the desk and resting on the back of it is the book-case proper. This is a sectional affair composed entirely of starch boxes, soap boxes, to be gotten at the grocers, and whiskey cases and light boxes procurable at the druggists. In the centre of the lot is placed one in which several small compartments for holding cards, envelopes, blank books and other small matter have been fitted. In most of the others one shelf only is placed, in the upper divisions small and in the lower large books fit snugly. In other boxes there is just room for one row of farm reports and magazines. When completed the shelves reach the low ceiling, though there is room to add others as more books accumulate.

What to do with the piles of farm journals is the next problem. They are not sufficiently stiff to stand alone and it costs a great deal comparatively to get them bound, and there are times when one wishes to turn up some back number. After getting them into assorted piles boxes of the right height were chosen and upright divisions fitted to each; between these the journals were set on end, and when the compartments are numbered or dated it will be comparatively easy to find that required. Three of these boxes were placed one above the other at the other side of the window and the whole surmounted with a small, old style sloping-lidded writing desk. The whole makes a fairly convenient standing desk.

To the window-frame is secured a lamp bracket, and the only other furniture consists of a comfortable lounge and a chair while the curtains are decorated with maps. There is not any beauty nor anything stylish about this room and its furnishings, nor is it even in a very convenient place, still it has its advantages. The book-case can be taken down and moved by one person without lifting cut a book, which is a consideration in its favor on house-cleaning days, or if moving to another house a few slats can be nailed on each box and they are already packed. The cost is, I can safely say, less than one dollar. It is not for the few who have money for luxuries, but for those who are compelled to be economical I write, and some may be able with these suggestions to construct something handsomer.

The Teaching of Domestic Science.

At the meeting of the National Council of Women held last month at Hamilton, Ont., Dr. James Mills, president of the Ontario Agricultural College, in giving an address on the above topic, among other things said:

In the general course of instruction given in this country a good deal has been done to fit people for the discharge of social and civil functions, and to take a broad, intelligent, sympathetic view of life in its varied aspects; and in that part of the course which is embraced in the teaching of reading, writing, arithmetic, and perhaps one or two other branches, valuable contributions have been made towards the equipment required for bread winning; but I am strongly of the opinion that we have not yet given anything like sufficient attention to the bread-and-butter side of education; and this, I think, is especially true of the education of our girls. We are, it appears to me, educating our girls as if they were all going to be ladies of leisure. From five to sixteen or eighteen years of age, they study arithmetic,

grammar, geography, literature, history, etc., and are much benefited thereby; but during all this time they do not receive from their teachers a single lesson nor even a hint that would assist one of them in darning a stocking, putting a patch on a pair of trousers, washing a piece of flannel, cooking a steak, setting a table, or furnishing and looking after a room. This may possibly do for the daughters of the rich; but it is a lamentably defective training for the thousands of noble girls who will have to take complete charge of their homes, and do the whole or most of their own work from the day of their marriage. I cannot help feeling that we who shape the educational policy of the country are largely responsible. In fact, I do not hesitate to say that it would be much better, if necessary, to confine the education of our girls to the three R's—reading, writing, and arithmetic—than to rear them in ignorance of the ordinary household duties, which have so much to do with the comfort and happiness of the people.

What benefit is it to a poor man to know that his wife has completed the public or even the high school course, if she cannot cook his food properly, mend his clothes, and keep his home clean and tidy? It is not necessary to multiply instances to show the great need of instruction in domestic economy. Nothing could be more manifest; and the only question is how long the people will tolerate the present system of education—how much longer they will allow trustee boards, boards of education, central committees, superintendents of education, and ministers of education to proceed on present lines, spending such vast sums of money for general scholastic education, and little or nothing for any of the special kinds of training so much needed by the rank and file of the people. The people must strongly and persistently demand that the scholastic ideals of education be abandoned so far as to provide ample instruction and training throughout this country in such practical and supremely im-

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portant subjects as agriculture and domestic economy. Domestic economy should be taught in the agricultural colleges of the country, the normal schools and normal colleges, the high schools and collegiate institutes, and academies, and to some extent in the public schools.

Why should not domestic economy be taught in the high schools of this country? Why should we have so many high schools named, and not one in the whole province equipped for any kind of training on practical lines? The thing is monstrous, and it is time for the people to insist on an immediate change. The public school teachers of the province get most of their education in these schools, and for that reason, if no other, every high school and collegiate institute in the country should at once be compelled to furnish a full course of lectures on domestic economy, and a thorough practical training in sewing and kindred branches of work—knitting, darning, patching, and the making of such articles of daily wear as are most needed by women with large families and small incomes.

Further, I venture to say that the number of ordinary scholastic high schools and collegiate institutes in the Province of Ontario is too large, and the time has come when either the number should be reduced or the Government grant diminished, in order to obtain the money necessary to establish at least five technical high schools in this province—one east, one central, one north, and two west—at convenient centres to teach chemistry, geology, botany and entomology in their relation to the industries of the country; and to furnish thoroughly practical courses of training in domestic economy, agriculture and horticulture, under regulations allowing each school some latitude in adapting its course to the circumstances and needs of the locality. Two short extra courses of instruction should be at once prescribed for the public schools; one in nature study, embracing the simplest and most practical principles of geology, botany and entomology; and the other on domestic science, including weekly practice in plain sewing, darning, patching and knitting, with very simple practical talks on cleanliness, tidiness, cooking, laundry work, and general housekeeping, endeavoring especially to make every girl ashamed of filth and untidiness, whether in person, home, or surroundings. These courses should not be made compulsory; but a fairly liberal extra grant of money, so much per pupil, should be paid to those schools which teach them

Probable:

Tommy Tompkins—I bet my pup kin lick your kitten.

Willie Wilkins—Well, I bet if he does he'll wish he hadn't when my kitty grows up.—*Ohio State Journal*.

Collectors and Students.

By Alice Hollingsworth, Beatrice.

The great mass of people who make a pastime of collecting articles of various kinds may be divided into two classes: those who, like the jackdaw, find pleasure in the effort to obtain things to put away with other things, but having obtained them, have no further interest in them; and those who collect in order to increase their knowledge of the world's history, its past, its present and the probabilities of its future. The first mentioned class are by far the most numerous, for stamp clubs and curio corners are the fashion of the hour, but you will look in vain for the geography, the natural history book, or works on geology or botany, by means of which the collectors should be making themselves familiar with the various objects in their collections, and thus advancing a pace beyond the jackdaw. Yet, if they only knew it, the history of the most common-place object is more wonderful than the most fantastic fairy tale ever composed. For instance, I have a piece of sandstone that came from the bottom of an oil-well at Oil Springs, a dirty oily-looking stone that scarcely one in twenty would give a second glance at. That it was at the bottom of an oil-well might seem to be a mere accident; but when we look into the facts we learn that if there was no sandstone or shale there would be no oil-well. So this bit of stone can tell us a story, the first chapter of which began many thousands—perhaps millions—of years ago, before man had appeared on earth, but when the earth was very busy preparing for the future comfort of the human race by embedding vegetable matter—probably seaweed—which contained a large amount of oil, in sand and mud, then sinking it down and carefully covering it over with a great weight of soil, by which process the sand became sandstone and the mud passed into shale. So you see the oil was bottled, labelled and set aside to be left till called for. If we wish to go still farther back in the history of this oil or petroleum, we find that we are using bottled sunlight, because sunlight is the most active agent in vegetable growth, and a stem or a leaf is simply a body of transformed sunlight. When embedded in the rocks it is strictly and literally fossil sunlight. In petroleum ancient sunlight is preserved in liquid form; in natural gas it is in a gaseous form. I think it would be difficult to name a more common place object than the whitewash on the kitchen wall. We are so accustomed to looking at it that we never stop to think of the long, long journey it has travelled, of the ages upon ages that Nature has spent in preparing the lime for the whitewash pail. Nobody knows where it first began, nobody ever will know, for that belongs to the First Great Cause, but men who have given their lives to

collecting, comparing, analyzing and studying have traced it back to a time when down in the calm depths of the ocean untold myriads of little creatures, so minute that there are said to be 40,000 of them in a square inch of chalk, were busily absorbing from the water mineral substance which they turned into beautiful shells to encase their strange little bodies. Then, having lived their day and done their duty as animate creatures, they sank on the ocean floor to accomplish greater ends in death. It is the old story of "little drops of water, little grains of sand," etc. These little organisms, so small as to be barely perceptible when taken singly, have united in numbers to form vast beds 1,300 feet deep. This is the origin of chalk. The same process of chalk-making is going on at the present time. When the naval officers surveyed the bottom of the Atlantic Ocean before laying down the electric cable between Ireland and America, they found vast plains of oozy mud, made up almost entirely of just the same atoms as make up our chalk. We do not have to dive for chalk; it is found in hills, and there are whole mountain ranges of it, yet they carry so many shells that their marine origin is indisputable. The explanation is this: The earth which seems to us the very embodiment of stability, is of all things most unstable. The surface is continually rising in one place and sinking in another, so that dry lands and oceans have frequently changed places, while new mountains are thrown up by the volcanic force from within, and old ones are plowed and ground down by glaciers. Chalk is not lime but what is called "carbonate of lime," and is a soluble in carbonic acid which forms a part of our atmosphere and which every rain-ooorm brings down. This coming in contact with the exposed surface of the chalk dissolves and carries off a portion of it in little rills which join the larger streams and so on until the dissolved chalk is back once more in the ocean. The next step brings us to the coral polyp, and here we meet with another instance of the amazing results that may be attained by co-

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operation when practised by even the smallest atoms of animated creation. Such mighty oulders are these little coral polyps that all the works of man are small compared with theirs. One single reef, for instance, stretches along the north-east coast of Australia for nearly a thousand miles. Every island througho ut a great part of the Pacific is fringed round with its coral reef, and there are hundreds of islands of strange shapes which are composed entirely of coral. Now, they tell us that the limestone which is burnt to make lime is nothing but very ancient coral reefs, for the coral polyp's building material is the chalk and lime that the ocean holds in solution, and this is one of the proofs of the rising and sinking of the earth's surface. In the fields around Guelph you may pick up pieces of ancient coral still retaining their original form, and bearing witness to the fact that that part of Ontario had once been covered by a body of warm salt water, for the nearest living relatives of these fossil corals are to be found only in tropical seas.

(To be continued.)

"Old Age Cure" Again.

The Chicago *Tribune* of recent date contains the report of an alleged cure for old age which two men in the Chicago Clinical School have brought forth, Prof. Joseph R. Hawley and Alex. C. Weiner. The return of youth, it is asserted, is produced by hypodermic injections of the lymphatic fluid of animals, particularly young goats. The discovery was made a year ago, and subsequently secret demonstrations of its efficacy are proved.

The general theory of the discovery is that if the mineral deposits which accumulate in the bones in the process of life can be replaced with the life cells contained in the lymphatic glands of goats, deterioration of the bones will be prevented, and elasticity and youth will be retained in the system much longer.

In one of his experiments at the Clinical School, Dr. Hawley administered hypodermic injections of the fluid from the lymphatic glands of a goat to a dog known to be fourteen years old. A diagnosis of a portion of the femur before the injection showed the bone contained large deposits of phosphate, carbonate and soda. The dog was watched carefully for two months, during which frequent injections of the lymph compound were made. At the end of that time another diagnosis showed the larger part of the mineral deposits had been removed, and the animal was as lively as a puppy.

A number of human beings, it is said, have been experimented on in Chicago in the same way and with the same results. The apostles of the discovery do not claim that a man or woman thus charged with goat's "life cells" will live forever, but they say life will be prolonged, perhaps doubled. —*Pathfinder.*

Cooking Cabbage.

Cut the cabbage in quarters, remove the wilted leaves and the core. Have over the fire a large kettle of rapidly boiling salted water, drop in the cabbage, one piece at a time, that the boiling may not be checked, add a saltspoon of soda, and stir well, then cook the cabbage uncovered about half an hour. There will be no perceptible odor after the first few moments, and the cabbage will cook tender more quickly than when covered. Many people prefer to separate each leaf from the head and cook the leaves as they would greens. When the cabbage is tender, drain it well, using some pressure, for it is quite watery. Season with butter, salt and pepper, or with Sauce Hollandaise. Or you may chop it fine, put it in a baking dish, sprinkling each layer with grated cheese, and cover with a white sauce and buttered cracker crumbs. Bake it until the crumbs are brown.—*American Kitchen Magazine.*

Numerous complaints have come before a certain public official in regard to the quality of food served to the inmates of one of the public institutions, and he determined to investigate. Making his way to the building just about dinner time, he encountered two men carrying a huge steaming boiler.

"Put that kettle down," he ordered, brusquely, and the men at once obeyed. "Get me a spoon," he next demanded. The man that brought the spoon was about to say something but was ordered to keep silent. "Take off the lid," was the next command; "I'm going to taste it." The two men, cowed by the official's brusqueness, watched him gulp down a good mouthful.

"Do you mean to say that you call this soup?" the official demanded. "Why, it tastes to me more like dirty water."

"So it is, sir," replied one of the men, respectfully. "We were just scrubbing the floors."—*Exchange.*

COMMON SENSE KILLS Roaches, Bed Bugs, Rats and Mice. Sold by all Druggists, or 381 Queen W. Toronto.

BEWARE OF IMITATIONS.

AMERICAN

Leicester Breeders' Association

A. J. TEMPLE, Secretary.

CAMERON, Ill., U.S.A.

THE NEXT ANNUAL MEETING will be held in the Parlors of "The Tecumseh" Hotel, London, Ont., on **Tuesday, Dec. 12th, 1899, at 2 o'clock, p.m.**

(The Secretary's headquarters will be at The Tecumseh during the Fat Stock Show).

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One Style Only. **OUR BEST.**
Warranted to last Ten Years without repairs and to out-hatch during three trials any other incubator—bar none; **THIS IS YOUR MONEY BACK.** Built for business—sold on honor. 16-page illustrated circular and price list **FREE.** Poultry Manual and Catalogue No. 69 (160-pages, 8x11.) entitled, "How to make money with Poultry and Incubators" sent postpaid for 15c. in stamps—worth dollars. Address nearest office.
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Managing Director, D. T. McAINSH
Editor, J. W. WHEATON

Farming is a paper for farmers and stockmen, published weekly, with illustrations. The subscription price is one dollar a year, payable in advance.

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Discontinuances.—Following the general desire of our readers, no subscriber's copy of **FARMING** is discontinued until notice to that effect is given. All arrears must be paid.

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Letters should be addressed:

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TORONTO.

QUESTIONS AND ANSWERS

SICK TURKEYS.

To the Editor of **FARMING**:

Will you enquire for me through your paper how to treat sick turkeys. We have taken your farming journal for a number of years. My turkeys are drooping away. Their droppings are of a green and yellow color at the time of their sickness, and they don't last long when they take sick.

FARMER'S DAUGHTER.

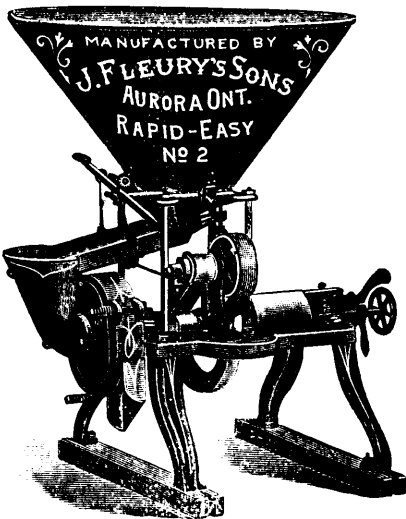
Answered by A. G. Gilbert, Poultry Manager, Central Experimental Farm, Ottawa.

The symptoms point to liver disease or acute dysentery caused by eating improper substances, mayhap in shape of decayed animal or vegetable matter. Try a good condition powder and use as directed. Drop a small piece of alum in the drink water. There are too many turkeys dying, of similar symptoms, in different parts of the country, and thorough investigation into cause, disease and treatment (if any) should be at once made. Send a turkey that has just died to the Bacteriologist, Ontario Agricultural College, Guelph, to ascertain whether death is due to germ disease or not. At same time give full particulars of how the birds are housed, on what fed and what they drink. Give all symptoms of the disease. Do the birds drink filthy water, barnyard leakage, etc.? Let your correspondent for her own good, and that of others take action in this matter.

Ontario Fruit Growers.

We have been informed by the secretary, Mr. L. Woolverton, Grimsby, Ont., that the next annual meeting of

Rapid - Easy Grinders



MORE work — BETTER work —
with SAME POWER than
any other Grinder.

Convincing Evidence as Follows:

"The Rapid-Easy Grinder is giving COMPLETE SATISFACTION, and we are MORE THAN PLEASED. In TWO HOURS and FIFTEEN MINUTES we ground 84 bags or 210 BUSHELS of peas and oats mixed, and did FIRST-CLASS WORK."
"ROBERT MORTON & SONS, Beetch, Sept. 22, 1899."

"The Rapid-Easy Grinder I bought from you last winter has proven VERY SATISFACTORY in grinding ALL KINDS of grain. I ground TWENTY BAGS in THIRTY MINUTES, doing SPLENDID WORK. It does all you claim for it."
"HENRY SWITZER, Bondhead, Sept. 26, 1899."

J. FLEURY'S SONS, Aurora, Ont.

Gold Medal for Plows, etc., at World's Fair, Chicago. On application we will send a beautiful lithographic hanger showing this Grinder.

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For MENDING HARNESS, BELTING, etc. Indispensable to Farmers, Liverymen and Threshermen. **STAR RIVETER** complete with 50 tubular rivets, \$1.00. Best selling article ever introduced. Agents write for special prices and territory.

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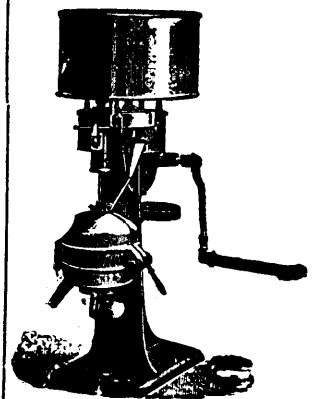
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ALEXANDRA AND MELOTTE CREAM SEPARATORS

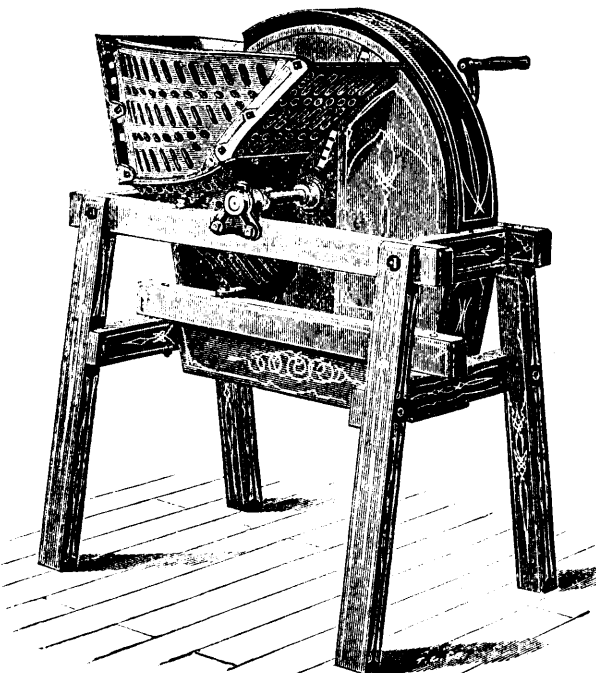
We ask all intending buyers of Cream Separators to study the merits of the "Melotte," if they want to get the best results. The "Melotte" has beaten all competitors in public working trials. Takes one-third less power. See on free trial.

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MANUFACTURERS OF
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Please write for Price List and Descriptive Catalogue.

the Fruit Growers' Association of Ontario will be held at Whitby, Ont., on December 5th and 6th next. This is always a gathering of interest and profit to fruit-growers generally, and this coming convention will be no exception to the rule. We bespeak for the Whitby meeting a large attendance.

National Creamery Butter-Makers' Association.

The next annual meeting of this great national dairy convention will take place at Lincoln, Neb., on Feb. 19-23, 19,000. Elaborate arrangements will be made for a large butter exhibit. Some \$5,000 in prizes will be given for butter exhibits. Of this amount not less than \$4,000 will be divided *pro rata* as follows: \$1,500 to be distributed among those scoring over 90 to 94 inclusive; \$2,500 to be distributed among those scoring over 94. This is the great American creamery butter show, and we think it would be a good plan to have an exhibit of Canadian butter made there. The secretary is Mr. E. Sudendorf, Elgin, Ill.

Canadian Produce in Britain.

From statistics recently published in London, England, we learn that the imports from Canada for the month of October have been :

Cattle, 11,319, valued at £191,633; sheep and lambs, 10,719, £16,246; wheat, 558,300 cwts., £193,634; wheat, meal and flour, 265,300 cwts, £122,428; peas, 166,900 cwts., £55,532; bacon, 52,614 cwts., £91,850; hams, 10,156 cwts., £21,298; butter, 47,201 cwts., £219,057; cheese, 211,527 cwts., £523,092; eggs, 197,659 great hundreds, £68,982; horses, 628, £17,357.

Compared with the corresponding month in the previous year, bacon, ham, butter, eggs, horses and sheep show an increase of 25 per cent., while cheese and cattle show a decrease of 25 and 30 per cent. respectively.

The total value of imports from Canada is £2,125,736, and of exports to that colony, £436,693.

Better Farm Poultry.

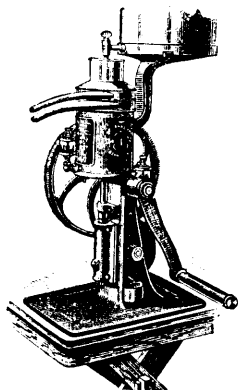
Intelligent interest in fine poultry is becoming more general from year to year. Evidence of this is the marked improvement of the Poultry Press and the attention paid to the subject by the more general farm papers.

No small credit for this is due to the breeders of poultry who have for years advertised their stock, maintained exhibits and contributed in many ways to arousing and stimulating the attention of the public at large. One of the names familiar to readers of FARMING is John Bauscher, Jr., of Freeport, Ill., whose card appears in another column. Mr. Bauscher has an immense establishment and makes a specialty of Farm Bred Stock. He publishes a very complete and expensively prepared manual at a merely nominal price and solicits correspondence. Intending purchasers will do well to write him before buying.

"ALPHA" DE LAVAL CREAM SEPARATORS

One Hundred and Sixty Thousand in Use.

First, Best, Cheapest.



- Excel all others for close skimming and ease of running
- Saves a great deal of labor.
- Saves one-half the time in butter-making.
- Saves the cost of utensils.
- Saves the cost and handling of ice.
- Produces more and better cream.
- Separator cream commands a better price and is more valuable for ice-cream; gives from 10 to 25% greater yield of butter, and is more churnable.
- It doubles the value of skimmed milk for feeding stock, it being warm and fresh from the cow.

A Farmer cannot afford to be without a Cream Separator.

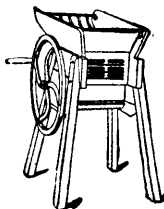
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The Canadian Dairy Supply Co.

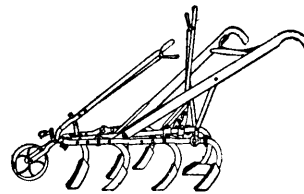
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MONTREAL, QUE.



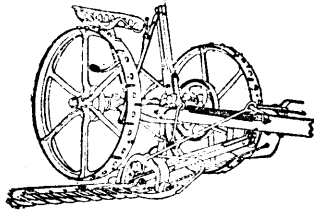
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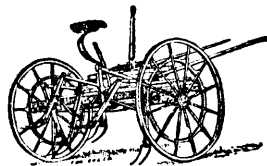
ROOT CUTTER.



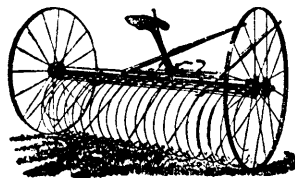
SCUFFLER.



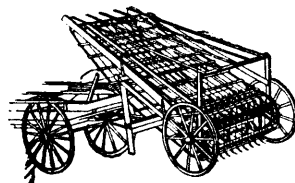
THE MAXWELL MOWER.



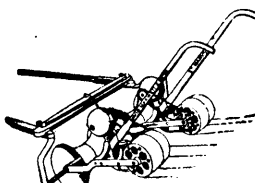
TEDDER.



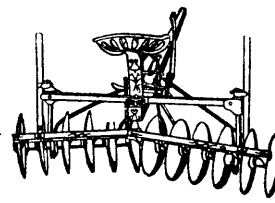
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DISK HARROWS, TURNIP SOWERS, ROOT
CUTTERS, WHEELBARROWS, ETC.

RESPONSIBLE AGENTS WANTED IN ALL
UNOCCUPIED TERRITORY.

Toronto Poultry Show.

The show season for poultry when they are to be seen in full dress parade is now near at hand and we are glad to note that the Toronto Poultry Association intends holding another exhibition this year. Encouraged by the great success of the past two shows, the executive are resolved to make the annual show in Toronto a fixture and have selected the week previous to Christmas for their display, which last year was admitted by those in attendance to be the finest exhibition of poultry ever gotten together in Canada.

The committee are providing what they call "Novice" classes open only to those who have not won a first prize at some of the leading shows. This should prove a great drawing card, as it not only bars out the professional but also any birds that may have won any first prizes at these shows.

We are advised that the dressed poultry and egg exhibit will be one of the leading features of the show to which we will give particular attention in our next issue. Dr. A. W. Bell, 536 Ontario street, Toronto, is secretary.

Strathroy Dairy School.

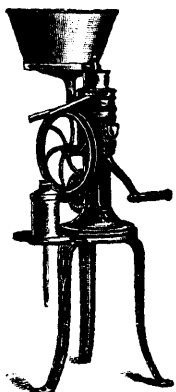
A New Superintendent Appointed.

The Western Dairy School located at Strathroy, Ont., will open on December 4th next. The first course will be for butter-makers only and on January 3rd the full course will begin. Mr. Archibald Smith, of Beachville, Ont., inspector and instructor for the Cheese and Butter Association of Western Ontario has been appointed resident superintendent. Mr. Smith is a conscientious and painstaking student of dairying who has had a wide and varied experience in practical cheese and butter-making, and we have reason to believe that he will do much to place the Strathroy School on such a footing as will bring to it the confidence of dairymen in the western part of the province. A splendid field for useful dairy educational work opens up for Mr. Smith in this new capacity in which we think he will not be found wanting. He will have an able staff of assistants consisting of Mr. Geo. R. Johnston as butter-maker and Mr. C. O. Luton, instructor for the Western Association as cheese-maker. In addition a lady instructor will be appointed to the home dairy.

Stock Notes

JERSEYS FOR N. Y. STATE.—Capt. Wm. Rolph, Markham has recently sold his pure St. Lambert Jersey bull, Exile of Glen Rouge, 37,213, to Mr. John J. Riker, of N.Y. State. He is without doubt as fine a Jersey bull as has been shipped to the United States for some time. He is sired by the pure Stoke Pogis-Marjoram bull, One Hundred Per

The National Cream Separator



Style No. 1.
Capacity—330 to
350 lbs. per hour
Price, \$75.00

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A wise investment that progressive farmers are buying as they buy other useful machinery. The National will yield from $\frac{1}{2}$ to $1\frac{1}{2}$ lbs. of butter per week per cow more than is being done by the old laborious wasteful methods of skimming milk. One pound of butter per week from one cow for 9 months, at 15c. per lb., will pay 8 per cent. interest on the cost price of the National. Easy to run by boys 8 to 12 years old. Easy to clean. Simple to operate. The neatest in style and finish. A perfect skimmer. Guaranteed as represented, and a trial for one week given to intending buyers. If not satisfactory, may be returned to us at our expense. No risk. Sold on their merits. Send for testimonials and Catalogue.

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Points of Merit :



1. To change from pulping to slicing is but the work of a moment.
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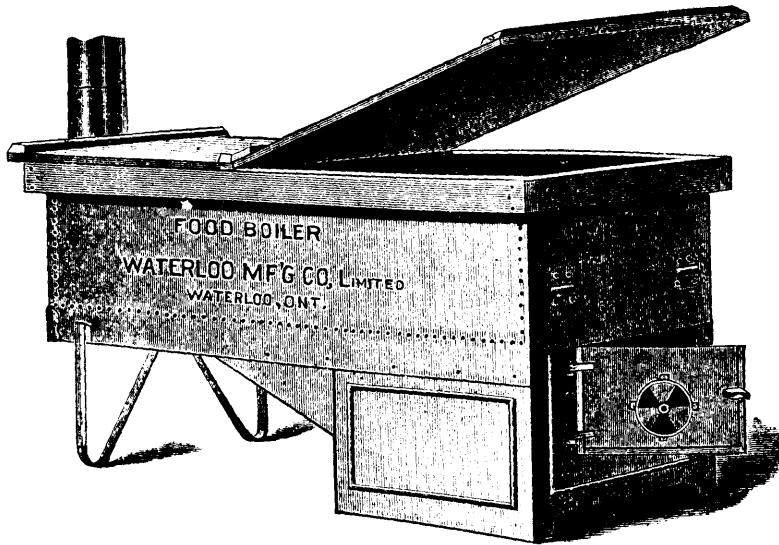
THE ONLY DOUBLE ROOT CUTTER MANUFACTURED.

Fitted with Roller Bearings, Steel Shafting and all that is latest and best in principle, material and construction.

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For Simplicity, Durability, Economy, and Saving of Time and Labor, it has no equal. Write for circulars.

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WATERLOO, ONT.

Cent., 16590, full brother in blood to Stoke Pogis 3rd, Stoke Pogis 5th, and Marjoram 2nd. His dam is Marjoram of Glen Rouge, 78420, test 22 lbs. 12½ oz. The daughters of Exile of Glen Rouge are heavy milkers and are of the true dairy type.

A VALUABLE TAMWORTH.—Hermanville Farm has recently purchased the prize Tamworth boar under 6 months at both St. John and Halifax fairs. At St. John this animal took 1st and at Halifax 2nd money. He is a splendid individual and will mate well with the Parkkill mate sows kept on the farm. Hermanville Farm is apparently bound to keep up the high standard of the "Hermanville Tamworths."

BIG HEREFORD SALE.—At the great sale of Hereford cattle at Kansas City the last week of October, 288 animals were sold, including the cream of the Hereford breed in the United States. A summary of the sale shows that 151 bulls brought \$46,355, averaging \$306.98 per head, and 137 females brought \$44,975 averaging \$328.28 per head. The total sales were 288 which brought \$91,330 averaging \$317.11 each.

GALLOWAY BREEDERS.—At the next annual meeting of the American Galloway Breeders Association to be held at the Sherman House, Chicago, on Nov. 23rd next, The following amendments will be offered concerning the by-laws:

"No member of this association shall sell or offer for sale for breeding purposes any grade or unregistered bull.

"Any member of this association convicted by a majority of the directors at any meeting of the board, of violating the preceding section shall be expelled from this association and the reason for such expulsion shall be spread upon the records, and a copy thereof be mailed by the secretary to each member of the association."

SHROPSHIRE SHEEP AT THE MELBOURNE ROYAL SHOW AND MESSRS. PECKS' AUCTION SALE.—The following extracts from letters received by the last mail will be read with interest by breeders of Shropshire sheep in all parts of the world. Yours faithfully,

ALFRED MANSELL,
Shrewsbury, Oct. 24th, 1899.

From Mr. T. J. Burbury, under date Sept. 15th, 1899:

"You will be very pleased to know that at the Royal Show at Melbourne we had a grand display of Shropshire sheep, acknowledged on all hands to be the best show of Shrops. ever seen in Australia, and the numbers considerably outnumbered any other breed, and were the centre of attraction in the sheep classes. What will interest you most will be to know that the Shrops. have taken the leading position here amongst the mutton breeds, and at Messrs. Pecks' sale 190 Shrops. sold at an average of £9 5s. Mr. A. J. Simpson's champion ram sold at 77 guineas to a Tasmania breeder, my first prize ram lamb at 76 guineas, and my first prize pen of ewes at 28, 26 and 23 guineas each.

"The demand for fat lambs (for crossing for fat lambs) was very keen, and all lots offered sold readily. I think I may safely say that in Victoria Shrops. stand to-day in the estimation of sheep breeders as the breed 'par excellence' for crossing to produce fat lambs for freezing purposes."

From Mr. A. J. Simpson, under date Sept. 19th, 1899:

"I have just returned from the Melbourne Royal Show, which was the best show of Shrops ever seen in Australia, all the best breeders in the different colonies being represented. I was very successful, gaining two champion, the gold medal, four 1sts, two 2nds, and two 3rds. The champion ram was a young ram lamb in quarantine out of one of the last ewes you sent me bred by Mr. J. Harding by Anxiety, and his sire was J.S.H. The champion ewe was bred in Tasmania, a beautiful woolled ewe by Beslow Star.

"The Shropshires were the attraction in all the sheep classes. They were also well represented in the fat sheep classes, their crosses gaining all the freezing prizes. I got

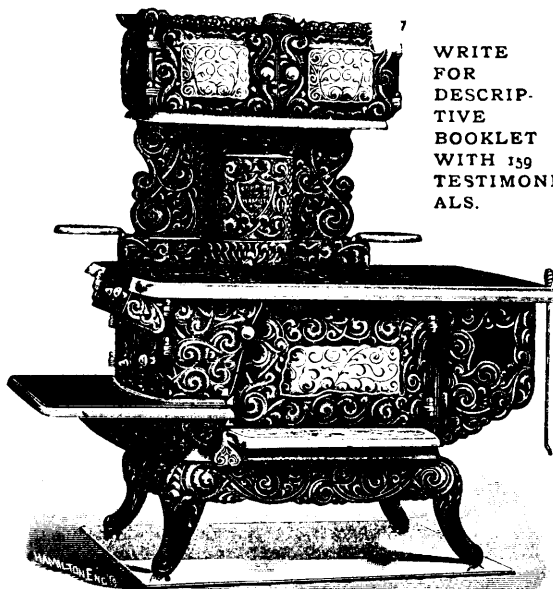
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A fitting tribute to skill in
range construction



WRITE
FOR
DESCRIP-
TIVE
BOOKLET
WITH 159
TESTIMONI-
ALS.

H. MILLER, of Hamilton, says:—"The Aberdeen Range I purchased from you some months ago gives perfect satisfaction—a rapid and perfect cooker and baker—and the small fuel consumption has been a surprise to me—in every respect the Aberdeen is all that could be desired—it works well and is a beauty to look at."

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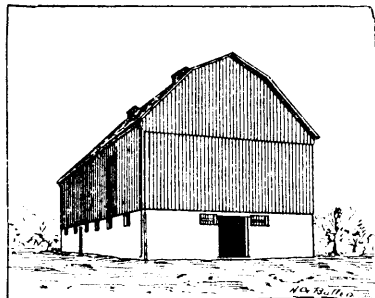


110 for 10 Cents

This book contains one hundred and ten of the best humorous recitations, embracing the Negro, Yankee, Irish and Dutch dialects, both in prose and verse, as well as humorous compositions of every kind and character. Sent, post-paid, with our illustrated catalogue of books and novelties for only ten cents.

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Thorold
Cement...



Do you intend building Barn Basements, or Stable Walls, or Walls of any kind? If so, use "Battle's Thorold Cement," which can truly be called the

Farmer's Favorite Cement

Mr. J. V. Cooper, of Cedarville Stock Farm, Picton, Ont., the well-known breeder of Shorthorn Durhams and Oxford Down Sheep, who used a large carload, says: "Your cement is a credit to you, and I am more than pleased with my concrete walls."

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SECRET TEMPER, CROSS-CUT SAW



WE take pleasure in offering to the public a Saw manufactured of the finest quality of steel and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A Saw, to cut fast, "must hold a keen cutting edge"

This secret process of temper is known and used only by ourselves.

These saws are elliptic ground thin back, requiring less set than any saws now made, perfect taper from tooth to back.

Now, we ask you, when you go to buy a saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good ask your merchant to let you take them both home and try them, and keep the one you like best.

Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand.

It does not pay to buy a Saw for one dollar less and lose 25 cents per day in labor. Your Saw must hold a keen edge to do a large day's work.

Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.

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GALT, ONT.

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95 PER CENT. hatches are often reported by those who use these Incubators. One reason for this record is absolute uniformity of temperature in egg chamber. Correct instructions for operating; has fire-proof lamp. A great mistake it would be to purchase an Incubator or Brooder without first getting a copy of our 148-page Catalogue. Send 3 cents for Illustrated Catalogue of Incubator, Brooder, Poultry and Poultry Supplies.

THE POULTER'S GUIDE, New Edition, 15c. per ma

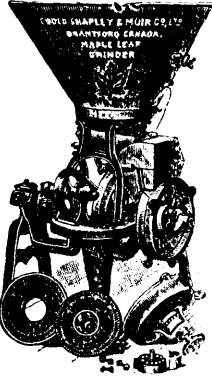
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TWO SIZES
FOR ANY
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No. 1 has 10-
inch reversible burrs
No. 2 has 8-inch
single burrs.

Both have ball-
bearing burr plates,
relief springs and
shake feed.



Grind fine and fast with least power.
Always guaranteed. A trial given. Hundreds in use.

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BRANTFORD, ONT.

Also makers of Galvanized Windmills,
Towers. Wood and Iron Pumps, Etc.



DOMINION PATTERN

COW TIE AND STALL FIXTURE

The Stall Fixture is very strong, and because of its circular cross section is exceedingly rigid. Its simplicity, convenience and ease of attaching make it a great favorite. The short chain makes the tie cheaper than the ordinary patterns.

AMERICAN CHAINS

because of the short links, handsome appearance, smooth surface—which cannot injure the animal's neck—and great durability, are superior to all other styles of chain for C. W. Ties. For further information see Special Cow Tie Catalogue, free on application.

ONEIDA COMMUNITY, LTD.,
NIAGARA FALLS, ONT.

1st in a special for pen of three wethers out of Merino ewes by rams of any British breed, mine, of course, being got by a Shrop. ram.

"There is a great demand for flock rams this year, lamb freezing is going ahead so much in the colony, and the Shropshire crosses are far and away reckoned the best by all who have given them a trial."

IN SPLENDID SHAPE.—Mr. A. C. Hallman, New Dundee, Ont., writes: Although the readers of FARMING haven't heard from Spring Brook Stock Farm lately, yet everything is all hustling along nicely. I have a very choice collection of Tamworths, both imported and Canadian bred, and the equal for quality and numbers, I believe I am safe in saying, is not to be found in the Dominion British King, No. 942 (imported), who was an easy first at Toronto in a very strong class, is a real good one. His breeding is equally choice. His sire and dam and all his ancestors have been first prize winners for generations at the Royal and leading exhibitions in England, so that there is really no surprise for him distinguishing himself so nobly in the prize ring. His stock is equally fine. I have the finest lot of young pigs I ever owned, sired by him and by my other imported boar, Whilaid Crystal, No. 938, Royal winner in England in 1898, whose breeding and individuality is equally as choice as that of British King. My young stock is remarkable for fine baco form, great length and depth of side, very smooth, and just what the packers are so much in need of. My brood sows are the right type. Amongst them are some wonderful fine sows that have distinguished themselves in the show ring both in this country and in England, and had they been fitted for exhibition this year, which they were not, honors would have been differently divided, but I preferred to keep them at home and raise pigs from rather than injure them by fitting.

My sales have been highly satisfactory. I made a large number of sales at the exhibition and since then. I have one boar left yet, five months old, and some twenty-five boars three months old, and a dozen younger ones, also six fine March and April sows and several litters from June, which are developing in grand shape. I was never in better shape to serve the public in blooded stock. Everything is of prime quality. A visit to Spring Brook will convince the most skeptical.

My Holsteins are also doing finely and sales are very satisfactory. Lady Alma 2nd gave birth to a beautiful heifer calf to-day. This cow is one of my best and is of the fine dairy form and a large performer. My Barred Rock cockerels are a splendid lot, showing very fine quality. Space forbids me to mention the sales, which I shall be pleased to chronicle in a later issue.

SHORTHORN SALE.—As announced elsewhere Mr. W. D. Flatt, Hamilton, Ont., is offering by public auction on Dec. 20th next a splendid lot of pure-bred Shorthorns. The lot will consist of 35 imported cows and heifers, 7 imported bulls, also a few Canadian bred heifers and young bulls, including 37 head of imported Shorthorns, which are now in quarantine. This sale is well worthy the attention of Shorthorn breeders, and the animals will be put on sale in moderate breeding condition. Further particulars will be given later in these columns.

Live Stock Exports.

The following is report of live stock shipments for week ending Wednesday, November 8th, as prepared by R. Bickerdike, of the Live Stock Exchange, Montreal:

		Cattle.	Sheep.	
Nov. 2	Brazilian	London	175	954
" 3	Memnon	"	324	
" 3	Yola	"	239	
" 3	Etolia	Bristol	250	
" 2	Amarynthia	Glasgow	250	
" 5	Man. Trader	Manchester	388	162
		Total,	1626	1116

HURSLEY STOCK FARM

A. J. C. C. Jerseys

Popular S. Lambert blood. 12-ear-old bull ready for service to offer, also a number of extra fine bull calves for sale. Some choice heifers 2 years old and milking for sale. Large improved Yorkshires. A large number of pigs ready to ship. No better to be had.

SILLS, SHAVER & SON, Winchester Springs.

BRANT STOCK FARM**OXFORD DOWNS**

FOUNDATION STOCK selected from the best breeders in Canada and England. Two Imported Rams (First and Second Prize-winners at Toronto in 1898) at head of flock. 30 Choice RAM LAMBS and some EWE LAMBS for sale.

J. H. JULL & SON,
Mount Vernon,
Ontario.

**Breeders
and
Importers**

Belvoir Stock Farm

OFFERS SHROPSHIRE SHEEP of the highest type. This flock has won more prizes at Christmas fat stock shows than all the flocks of Canada and the United States combined. The block is the final test. An extra lot of Shearling Rams, Imported Clydesdale Mares and Yorkshire Swine for sale.

R. GIBSON, DELAWARE, Ont.

HOLSTEIN FRIESIAN BULLS

Do you want a show bull to head your herd? then come and see Sir Pietertje De Kol II. and Prince Neptune. They are of the right breeding and will make sure winners. For full description write

H. BOLLERT, Cassel, Ont**IMMENSE COMBINED****Auction Sale**

OF

Ninety Head of Registered Stock,
AT MAPLE CLIFF FARM,

Tuesday, Nov. 28th, '99

CONSISTING OF

10 Ayrshire Bulls and Bull Calves, 20 Tamworths, 2 Improved Yorkshires, 10 Large English Berkshires, 10 Chester Whites, 12 Duroc Jerseys, 8 Poland Chinas, Boars and Sows of different ages.

Write for catalogue giving pedigree and description of each lot to the proprietors.

R. REID & CO., Maple Cliff Farm, Hintonburg, Ont.
J. G. CLARK, Woodroff Farm, Ottawa.

Maple Cliff Farm is within one mile of Ottawa city. Electric cars run to farm. NOTE—No Reserve.

W. D. FLATT**HAMILTON P.O. and TELEGRAPH OFFICE**

I will offer at Public Auction, on Dec. 20th, 35 imported cows and heifers, 7 imported bulls, also a few Canadian bred heifers and young bulls; this lot will include the 37 head of imported Shorthorns which I have in quarantine at the present time. They are well worthy the attention of Shorthorn breeders and will be put on sale in moderate breeding conditions. Further particulars later on.

Market Review and Forecast

Office of FARMING,
Confed. Life Building,
Toronto, Nov. 13, 1899.

While the warm weather of the past week or two has made things a little quiet in some wholesale lines, still on the whole a healthy volume of business is generally reported. There is a great rush of shipping orders which will likely continue till the close of navigation. Traders in general seem to have unbounded confidence in the future. There is a tendency to firmness in the money market and private funds are not offered as freely as they were sometime ago. In some sections borrowers on real estate and other securities have not found it easy to effect loans except at higher rates. Money on call is firm at 5½c. and discounts 6 to 7c. per cent.

Wheat.

The wheat situation shows little, if any, improvement. The Chicago market has ruled dull all week, and one of the features has been the absence of any large speculative element. The export demands have been disappointing, and, on the whole, the market is in no better position than it was a week ago, though a steadier feeling was reported in some quarters towards the close of the week. It is reported that the storehouse reserves of wheat in England are the largest since 1893, and yet the shipments continue large.

Cable reports of the week show a varied market, with generally a weak feeling and lower prices for spot business. At Montreal the export demand has fallen off considerably. No. 2 red winter is quoted at 74 to 75c. afloat and spring wheat at 75 to 76c. per bushel. The offerings here have not been large; there is only a fair demand and the market is easy at 65 to 66c. for red and white north and west and 69 to 70c. for goose. On the Toronto farmers' red and white brings 70c., spring five 68c., and goose 70c. per bushel.

Oats and Barley.

The export trade in coarse grains is generally dull, due to lack of ocean space, scarcity of railroad cars and poor demand from exporters. There is very little change in oats at Montreal. They are reported steady here at 25 to 26c. for white west and 27c. east. On the farmers' market oats fetch 29 to 31c. per bushel.

There is an easier feeling in barley at Montreal. The market here is unchanged at 40c. for No. 2 west and 35 to 36c. for feed barley. The quotations on the farmers' market here are 42½ to 46c. per bushel.

Peas and Corn.

Like other coarse grains, peas are flat and dull, at 65½ to 66c. afloat at Montreal. They are quoted here at 57c. east and 55½ to 56c. west. On the farmers' market peas bring 59c. per bushel.

There is no material change in the corn situation in the Western States. Car lots of American corn are quoted at Montreal at 43 to 44c., on track, and 40c. on track, Toronto.

Bran and Shorts.

Ontario bran is firmer and higher at Montreal, where quotations are \$15.25 to \$16 for bran, and \$17 to \$18 per ton for shorts in car lots. City mills here sell bran at \$13 and shorts at \$16 in car lots f.o.b., Toronto.

Eggs and Poultry.

There has been more inquiry for Canadian eggs in England, and prices have advanced 3d. per 10 dozen. The market on this side keeps firm, and it is felt that there is little more than enough stock in Canada to supply the home demand. Fresh eggs are in good demand here at 17 to 18c. per dozen in large lots; other quality is not so much in demand. On the Toronto farmers' market eggs bring 20 to 25c. per dozen.

Dressed poultry is coming forward in large quantities, and it is believed that as receipts increase prices will be lower. Some large consignments of choice turkeys which arrived in Montreal sold at 10c., and dried picked are quoted at from 9 to 10c. per lb., as to quality. Farmers should not scald poultry when picking, as it lessens the value by 1½ to 2c. per lb. Dry picked chickens have sold at 7 to 8c. per lb., but the general run bring 6 to 7c. Geese are quoted there at 5½ to 6c., and ducks at 8 to 9c. per lb. in large lots. Receipts are large here, with a fair demand, and prices inclined to weaken. Chickens are quoted at 20 to 50c., and ducks at 40 to 60c. per pair and geese at 5½ to 6c., and turkeys at 8 to 9c. per lb. in large lots. On the farmers' market prices are 10 to 20 per cent. higher than these figures.

Potatoes.

The Montreal market is quiet and car lots of 90-lb. bags bring only 40c., and in a jobbing way 50c. per bag. The market here is decidedly dull. Car lots are quoted at 35 to 37c. and jobbing lots 40 to 45c. per bag. On the Toronto farmers' market they fetch 40 to 50c. per bag.

Apples.

As noted elsewhere, the export apple trade is in a very bad shape, and at present shippers are not realizing the cost, let alone freight and charges. The cause is the bad condition of the fruit on arrival, rather than an over-supply. At Montreal the apple market has very little life in it, due to unfavorable cable reports. Stocks are fairly heavy, while the demand is limited at \$2.75 to \$3.50 for No. 1 and \$1.75 to \$2.10 for No. 2 quality.

Hay and Straw.

As we intimated two weeks ago, the British Government has sent a number of orders for hay to Canada. These are being filled at Montreal and have caused considerable excitement in the market there. A steamer was chartered last week to load 1,200 tons of hay at Montreal for Capetown. The order came from the English Government to Hon. Mr. Fisher, Minister of Agriculture, who is making arrangements to have it filled. The price to be paid is from \$12 to \$12.50 per ton on board steamer. At Montreal hay is higher at \$8 to \$8.50 for loose hay in 1,500-lb. loads. Pressed hay is quoted at \$10 for No. 1; \$8.50 to \$9 for No. 2, and \$7.50 to \$8 for clover. There is a good demand here for baled hay at \$9 to \$9.50 for car lots of No. 1 timothy. On the Toronto farmers' market hay brings \$11.00 to \$14; sheaf straw \$8.50 to \$9, and loose straw \$4 to \$5 per ton.

Seeds.

Red clover is quoted at Montreal at 8 to 9c. per lb. and Timothy at \$1.25 to \$1.50 per bush. for American. American markets rule about the same. On the Toronto farmers' market red clover is quoted at \$4.25 to \$5; alsike at \$5 to \$7.20; white clover at \$7 to \$8, and timothy at \$1 to \$1.50 per bushel.

Cheese.

While the cheese situation shows very little improvement so far as prices are concerned, yet from a statistical point of view it is exceedingly strong. It is estimated on good authority that the English make will be nearly 1,500,000 boxes short. The stocks in Great Britain at the present time are estimated at 350,000 boxes, and those in Canada at the same figure. This leaves about 700,000 boxes to supply a deficiency of 1,500,000 boxes. If these figures are at all within the mark there is certainly good reason for believing that the market will rule strong. But the market is quiet and buyers are still holding back. With many of the Western factorymen unwilling to sell at present values, most of the sales during the week have been made with Eastern cheese, which can be bought cheaper, and as buyers are not so discriminating as to quality it goes. Montreal quotations are 10½ to 11c. for finest Eastern, and 11¼ to 11½c. for Western. The ruling prices at the local markets have been 10½ to 11c., but most factorymen were holding for higher values.

Butter.

The export butter market has not improved any as the following London cable to the *Trade Bulletin* of Nov. 9th shows: "The situation in butter is disappointing, being weak and lower, and although anxious holders in view of more liberal supplies have lowered prices another 2s. the demand does not seem to be helped thereby. Finest Canadian creamery 102s. to 104s; good to fine, 92s to 98s." At Montreal the market is dull and easy at 20 to 20½c. for choice creamery, 19 to 19½c. for good to fine, and 15 to 16½c. for Western dairy. In dairy goods there is a great scarcity of fine qualities. Receipts are larger here and prices are inclined to weaken. Creamery is quoted at 22 to 23c. for prints, and 20 to 22c. for tubs. Good to choice dairy tubs bring 16 to 18½c., and prints 19 to 20c. per lb. On the Toronto farmers' market lb. rolls fetch 20 to 25c. each.

Wool.

The Boston market has been strong and active and the weekly transactions have reached 21,557,500 lbs., the first time in the history of the trade that they have gone

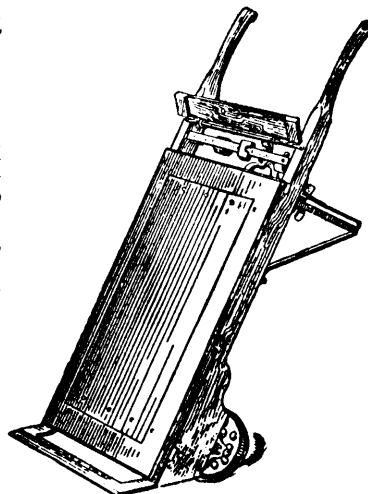
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WILL SAVE ITS COST IN NO TIME.



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St. Marys, Ont.

above 20,000,000 lbs. Everybody was rushing in to buy. The Montreal market keeps firm at 20c. to 21c. for Canadian pulled and 17½c. to 18c. for fleece. There is no change in values on the Toronto market.

Cattle.

The general tone of the cattle situation shows little change on the week. At all the leading markets really choice exporters' and butchers' cattle rule strong while undergrades are easy and hard to sell. Reports indicate a big falling off in Texas cattle which may help northern feeders later on. The receipts at Toronto market on Friday were fair but several lots were held over from Thursday so that the supply was large. The quality of the fat cattle offered shows no improvement and with few exceptions were of medium quality. Trade was fair for all good export and butcher's, but other quality were dull of sale. The bulk of cattle offered were stockers and feeders, the demand for which was not quite so good as most of the dealers have got all they want.

Export Cattle.—Choice lots of these sold at \$4.65 to \$4.85 and light ones at \$4.25 to \$4.40, the bulk selling at \$4.25 to \$4.50 per cwt. Heavy export bulls sold at \$4 to \$4.12½ and light ones at \$3.40 to \$3.65 per cwt.

Butcher's Cattle.—Choice picked lots of these equal in quality to the best exporters, weighing 1,000 to 1,100 lbs., sold at \$4.25 to \$4.40; good at \$3.60 to \$3.70; medium at \$3.40 to \$3.50; common at \$2.85 to \$3.12½, and inferior at \$2.30 to \$2.80 per cwt.

Buffalo Stockers.—Yearling steer weighing 500 to 600 lbs. are easy at \$2.56 to \$2.75, and heifers and black and white steers at \$2 to \$2.50 per cwt.

Feeders.—Light steers weighing 800 to 900 lbs. each sold at \$3.25 to \$3.40 per cwt. Choice high grade heavy steers in good condition 1,100 to 1,200 lbs. sold each at \$3.80 to \$4, and rough steers of the same weight at \$3.50 to \$3.75 per cwt. Feeding bulls bring \$2.75 to \$3.25 per cwt.

Calves.—These are in fair demand at Buffalo. On Friday here calves brought \$6 to \$12 each.

Milk Cows.—These sold at \$28 to \$50 each. Only a few offered were of good quality.

Sheep and Lambs.

There is a lighter demand at Buffalo with the general basis lower. The deliveries on Toronto market on Friday were large, especially lambs. Prices were low and many drovers refused to sell at prices offered and preferred to take chances at Buffalo. Sheep were easy at \$3.25 to \$3.40 per cwt. for ewes and \$2.50 for bucks. Butchers' sheep sold at \$2.75 to \$3 each. Lambs were easier at \$3.25 to \$3.40 per cwt. With a few choice ewes and wethers for export selling at \$3.75 to \$4 per cwt.

Hogs.

Hogs have taken another drop and on Friday though receipts were only fair, the best bacon hogs weighing 160 to 200 lbs. each sold at \$4.12½ and thick and light fats at \$3.75 per cwt. Unculled car lots sold at \$3.90 to \$4 per cwt. Essex and Kent corn fed hogs are worth \$3.75 to \$3.87½ per cwt. Live hogs are easier at Montreal with selections selling at \$4.25, and other grades at \$4 to \$4.10 per cwt. The *Trade Bulletin's* London cable of Nov. 9th re Canadian bacon reads thus:

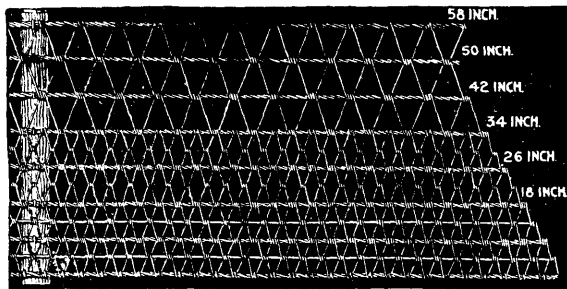
"The market has decreased another 2s. on the week, but at the decline there has been a better enquiry with a steady feeling. Canadian pea-fed being quoted 39 to 43s. for No. 1 and 37 to 41s. for fat and stout sides.

Jones—That policeman is a new man on the force.

Smith—How do you know?

Jones—Some one told him this morning there was a fight around the corner, and he hurried around in time to arrest both belligerents.—*Ohio State Journal.*

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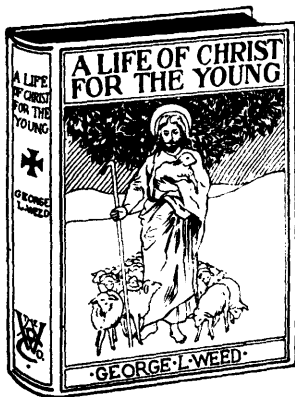
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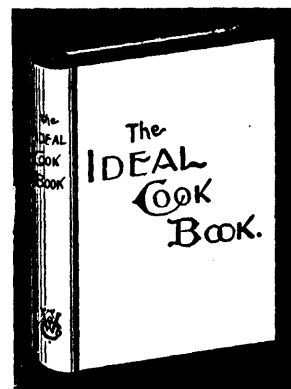
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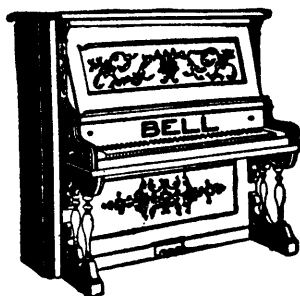
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Not only adds the necessary element, but renders the natural stores of inert food available to the plant, and ameliorates the quality of heavy soils. The results in **INCREASED YIELD** and **IMPROVEMENT IN THE QUALITY** of crop by its use have been so great as to seem almost incredible. **IT IS THE CHEAPEST**, most durable in effect, and the most easily obtained fertilizer in the world. **IT CAN BE OBTAINED FROM ANY LIME MERCHANT.**



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